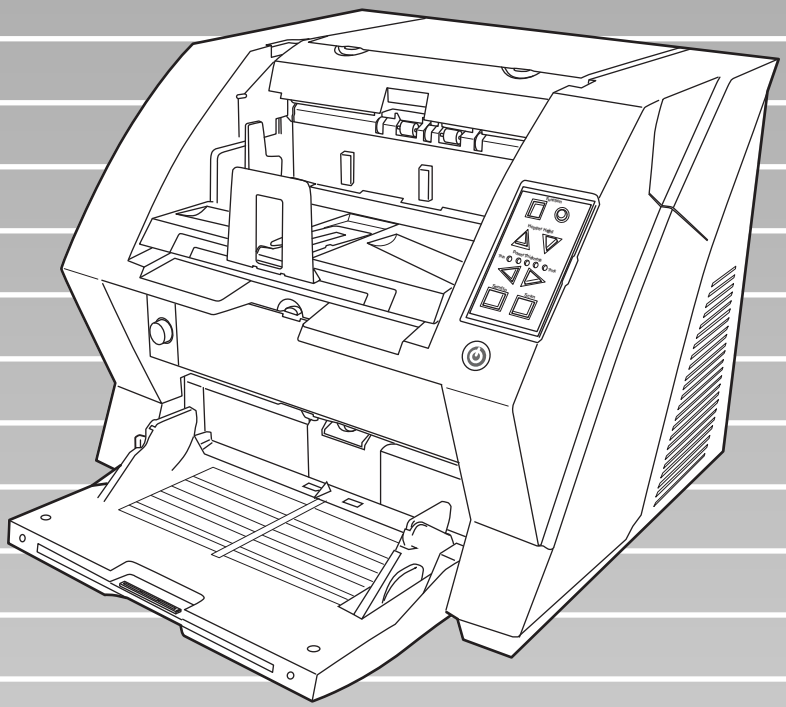
P3PC-1432-02ENZ0

fi-5900C Image Scanner

Operator's Guide



FUJITSU

INTRODUCTION

Thank you for purchasing the fi-5900C Image Scanner.
The fi-5900C is an image scanner designed to scan various documents in large quantities.
The fi-5900C has the following features.

■ Improvement of color scanning speed (100 sheets or 200 pages per minute) with high resolution (300dpi)

By the newly-developed high speed CCD and high speed image processing circuit, scanning speed (A4 color, 300dpi) of 100 sheets/200 pages per minute) is improved. Now you can scan a large amount of documents which is about 100,000 sheets a day!

■ Efficient pre-processing and post-processing!

This scanner is able to scan mixed documents stables of papers of different color, density, size and thickness. This makes the scanning process even simpler and economic, since you no not have to sort out the documents before scanning any more!

Furthermore, this scanner is equipped with an "Elevator" Stacker, moving automatically into the appropriate height, according to the amount of loaded documents. This will make the documents be easily and elegantly handled and also increases your scanning efficiency!

■ Prevention of data loss because of improved multi feed detection

This scanner is equipped with ultrasonic multi feed detection sensors, which detect reliably the feeding of 2 or more documents together into the scanner. Those multi feed can also be detected surely, when scanning documents of different thickness, size, color or density. This will help you to increase your efficiency, since the data loss caused by multi feed is detected immediately. This gives you the opportunity to correct the scanning without too much troubles and loss of time.

■ High image processing function

The automatic detection function of this scanner is able to detect if the loaded documents are color or monochrome and according to the detection the appropriate settings will be automatically chosen for the image creation. Since the scanner does this automatically, you do not have to set the image settings each time before scanning. Furthermore, The Kofax VRS image processing board is installed as standard equipment for this scanner. This VRS board which has a good reputation for image processing on a high level, enables you to create images of high quality and provides advanced functions like the "Automatic direction correction" and "Background equalization function".

■ Pre- and Post imprinter option can be installed

In today's document business, imprinters provide a vital tool for archiving, controlling and verification processes. For this scanner, you can select two optional types of imprinters, depending on your needs. The Pre-Imprinter Option prints information on the front side of the documents prior to the scanning. When using Pre-imprinter, the printed information will also be stored on the generated image. The Post-Imprinter on the other hand, will print after the scanning on the back sides of your documents. So only the originals, and not the images, will contain the imprint.

About this manual

The manual provides the following information.

1. NAMES AND FUNCTIONS OF PARTS

This chapter describes names and functions of parts.

2. BASIC OPERATIONS

This chapter describes basic scanner operations and basic document scanning.

3. SCANNING VARIOUS TYPES OF DOCUMENTS

This chapter describes how to scan various types of documents.

4. DAILY CARE

This chapter describes how to clean the scanner.

5. REPLACING CONSUMABLES

This chapter describes how to replace consumables.

6. SOLVING COMMON PROBLEMS

This chapter describes how to remedy document jams, other trouble, and items to check before contacting the agent where you bought the scanner, and how to check device labels.

7. ADF DOCUMENT SPECIFICATIONS

This chapter describes documents that can be used with this scanner.

8. SCANNER SETTINGS

This chapter explains the how settings can be done for the scanner using the Software Operation Panel.

9. OPTIONS

This chapter describes the options available for this product.

10. SCANNER SPECIFICATIONS

This chapter lists the scanner specifications.

The “Getting Started” is supplied to this Scanner.
This guide contains necessary information for getting started the scanner, also read the Getting Started.

1. PREPARING THE SCANNER

This chapter describes how to prepare the scanner for use.

2. INSTALLATION OF THE SCANNER

This chapter describes how to install and connect the scanner, and how to install the scanner application.

We hope that this manual is useful in taking full advantage of the fi-5900C Duplex Color Scanner's features.

■ Regulatory Information

FCC Regulations

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is located.
- Consult your dealer or an experienced radio/TV technician.

FCC warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

- The use of a shielded interface cable is required to comply with the Class B limits of Part 15 of FCC rules. The length of the SCSI interface cable must be 1.5 meters (5 feet) or less.
- The length of the AC cable must be 3 meters (10 feet) or less.

Canadian DOC Regulations

This digital apparatus does not exceed the Class B limit for radio noise emissions from digital apparatus set out in the Radio interference Regulations of the Canadian Department of Communications.

This Class B digital apparatus complies with Canadian ICES-003.

Le présent appareil numérique n'émet pas de parasites radioélectriques dépassant les limites applicables aux appareils numériques de la classe B et prescrites dans le Règlement sur le brouillage radioélectrique dictées par le Ministère des Communications du Canada.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Bescheimigung des Herstellers / Importeurs

Für den fi-5900C wid folgendes bescheinigt:
In Übereinsstimmung mit den Bestimmungen der EN45014(CE) funkentstört
Maschinenlärminformationsverordnung 3.GPSGV: Der höchste Schalldruckpegel beträgt 70 dB (A) oder weniger, gemäß EN ISO 7779.

International ENERGY STAR® Program

As an ENERGY STAR® Partner, PFU LIMITED has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

The International ENERGY STAR® Office Equipment Program is an international program that promotes energy saving through the penetration of energy efficient computers and other office equipment. The program backs the development and dissemination of products with functions that effectively reduce energy consumption. It is an open system in which business proprietors can participate voluntarily. The targeted products are office equipment such as computers, monitors, printers, facsimiles, copiers, scanners, and multifunction devices. Their standards and logos ( ) are uniform among participating nations.

Use in High-safety Applications

This product has been designed and manufactured on the assumption that it will be used in office, personal, domestic, regular industrial, and general-purpose applications. It has not been designed and manufactured for use in applications (simply called “high-safety applications” from here on) that directly involve serious danger to life and health when an extremely high degree of safety is required, for example, in the control of nuclear reactions at nuclear power facilities, automatic flight control of aircraft, air traffic control, operation control in mass-transport systems, medical equipment for sustaining life, and missile firing control in weapons systems, and when provisionally the safety in question is not ensured. The user should use this product with adopting measures for ensuring safety in such high-safety applications. PFU LIMITED assumes no liability whatsoever for damages arising from use of this product by the user in high-safety applications, and for any claims or compensation for damages by the user or a third party.

About the use of mercury

Hg	Lamp(s) inside this product contain mercury and must be recycled or disposed of according to local, state, or federal laws.

To avoid unexpected injuries;

- Do not put the substance contained in the lamp in your mouth as it has mercury.
- Do not breathe the chemical liquid contained in the scanner lamps.
- Do not incinerate, crush, or shred the lamps or scanner parts.

Illegal Copying

Reproducing bills, coins, government securities and passports, licenses issued by public author or civilian organizations, official documents, private paper is illegal and brought to justice

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Adobe, the Adobe logo, and Acrobat are either registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Other product names are the trademarks or registered trademarks of the respective companies.

How Trademarks Are Indicated In This Manual

References to operating systems (OS) are indicated as follows:

Windows 95	Microsoft® Windows® 95 operating system
Windows 98	Microsoft® Windows® 98 operating system.
Windows Me	Microsoft® Windows® Millennium Edition operating system.
WindowsNT 4.0	Microsoft® Windows NT® 4.0 Server operating system, Microsoft® Windows NT® 4.0 Workstation operating system.
Windows 2000	Microsoft® Windows® 2000 Professional operating system.
Windows XP	Microsoft® Windows® XP Professional operating system, Microsoft® Windows® XP Home Edition operating system.

Where there is no distinction between the different versions of the above operating system, the general term "Windows "is used.

Adobe Acrobat	Adobe® Acrobat®

All the descriptions in this manual assume the usage of Adobe Acrobat bundled with this product.

However, Adobe Acrobat may be upgraded without notice. If the descriptions differ from the screens actually displayed, refer to the Acrobat's "Help".

Manufacturer

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International Sales Dept., Imaging Business Division, Products Group
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Phone: (81-44) 540-4538

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■ Note, Liability

READ ALL OF THIS MANUAL CAREFULLY BEFORE USING THIS PRODUCT.
IF THIS PRODUCT IS NOT USED CORRECTLY, UNEXPECTED INJURY MAY BE CAUSED TO USERS OR BYSTANDERS.

Also, store this manual in a convenient and safe place so that it can be easily referred to during use of this product.

While all efforts have been made to ensure the accuracy of all information in this manual, PFU assumes no liability to any party for any damage caused by errors or omissions or by statements of any kind in this manual, its updates or supplements, whether such errors are omissions or statements resulting from negligence, accidents, or any other cause. PFU further assumes no liability arising from the application or use of any product or system described herein; nor any liability for incidental or consequential damages arising from the use of this manual. PFU disclaims all warranties regarding the information contained herein, whether expressed, implied, or statutory.

■ Preface

Safety Precautions

This manual describes important details for ensuring the safe and correct use of this product. Thoroughly read this manual before you start to use this product. In particular, be sure to read and fully understand the Safety Precautions described in this manual before you use this product.

Warning Indications Used In This Manual

This manual uses the following indications to ensure safe and correct use of this product, and to prevent possible danger and injury to the Operator and other persons.

⚠WARNING	This indication alerts operators to an operation that, if not strictly observed, may result in severe injury or death.
⚠CAUTION	This indication alerts operators to an operation that, if not strictly observed, may result in safety hazards to personnel or damage to equipment.

Symbols Used In This Manual

This manual uses the following symbols in explanations in addition to warning indications.

This symbol alerts operators to particularly important information. Be sure to read this information.

This symbol alerts operators to helpful advice regarding operation.

A TRIANGLE symbol indicates that special care and attention is required.
The drawing inside the triangle shows the specific caution.

A CIRCLE with a diagonal line inside shows action which users may not perform.
The drawing inside or under the circle shows the specific action that is not allowed.

Outline characters on a colored background show instructions users should follow.
It may also include the drawing that shows the specific instruction.

Screen Examples In This Manual

The screen examples in this manual are subject to change without notice in the interest of product improvement.
If the actual displayed screen differs from the screen examples in this manual, operate by following the actual displayed screen while referring to the User's Manual of the scanner application you are using.
Furthermore, the screenshots in this manual are for the FUJITSU TWAIN32 scanner driver, ScandAll 21 Image Capturing Utility Software, FUJITSU ISIS scanner driver, QuickScan™ image capturing software and Adobe® Acrobat®.

About Maintenance

The user must not perform repairs on this scanner. Contact the store where you purchased the scanner or an authorized FUJITSU Image Scanner service provider to make repairs to this product.

■ Safety Precautions

⚠WARNING

The following describes important warnings described in this manual.

Do not touch the Power cable with wet hands.

Do not touch the power plug with wet hands. Doing so might cause electric shock.

Do not damage the AC cable.

A damaged Power cable might cause fire or electric shock.

Do not place heavy objects on AC cables, or pull, bend, twist, heat, damage or modify AC cables.

Also, do not use damaged AC cables or power plugs, and AC cables or power plugs when the power outlet fitting is loose.

Use only specified AC cables and connector cables

Use only specified AC cables and connector cables. Failure to use the correct cables might cause electric shock and equipment failure.

Please do not use the AC cable provided with this scanner for other devices, since this might cause equipment failure and other troubles or an electric shock.

Use this scanner only at the indicated power voltage. Do not connect to multiple-power strips.

Use this scanner only at the indicated power voltage and current. Improper power voltage and current might cause fire or electric shock.

Also, do not connect to multiple-power strips.

Wipe any dust from the power plug.

Wipe off any dust from metal parts on the power plug or metal fittings with a soft, dry cloth. Accumulated dust might cause fire or electric shock.

Do not install the device in locations subject to oil smoke, steam, humidity, and dust.

Do not install the scanner in locations subject to oil smoke, steam, humidity, and dust. Doing so might cause fire or electric shock.

Do not use the scanner if you smell a strange odor coming from the scanner.

If you detect heat coming from the device or detect other problems such as smoke, strange smells or noises, immediately turn off the scanner and disconnect its power plug. Make sure that the smoking has stopped, and then contact the store where you purchased the scanner or an authorized FUJITSU scanner service provider.

Turn the scanner OFF if it is damaged.

If the scanner is damaged for any reason, turn off the scanner and unplug the AC cable before contacting the store where you purchased the scanner.

Do not put liquids inside the scanner.

Do not insert or drop metal objects into the scanner. Do not scan wet documents or documents with paper clips or staples. Do not splash or allow the scanner to get wet.

If foreign objects (water, small metal objects, liquids, etc.) get inside the scanner, immediately turn off the scanner and disconnect the power plug from the power outlet, contact the store where you purchased the scanner or the Maintenance Service Center. Pay particular attention to this warning in households where there are small children.

Do not touch the inside of the scanner.

Do not take apart or modify the scanner. The inside of the scanner contains high-voltage components. Touching these components might cause fire or electric shock.

⚠ CAUTION

The following describes important cautions described in this manual.

Do not install the scanner on unstable surfaces.

Install the scanner on a desk so that none of its parts protrude outside of the desktop. Also, make sure that the scanner is installed on a flat, level surface.

Do not install the scanner on unstable surfaces. Install the scanner on a level surface that is free of vibration to prevent it from tilting.

Install the scanner on a strong surface that will support the weight of the scanner and any other devices on that surface.

Firmly insert the power plug.

Firmly insert the power plug into the power outlet as far it will go.

Do not block the ventilation ports.

Do not block the ventilation ports. Blocking the ventilation ports generates heat inside the scanner, which may result in fire or scanner failure.

Do not place heavy objects or stand on top of the scanner.

Do not place heavy objects on the scanner or use the scanner's top surface for performing other work. Improper use may cause injuries.

Before moving the scanner, disconnect the power plug from the power outlet.

Do not move the scanner with the power and interface cables connected as this might damage the cables, causing fire, electric shock or injuries.

Before moving the scanner, be sure to disconnect the power plug from the power outlet, and disconnect connector cables. Also, make sure that the floor is free of obstructions.

Protect the scanner from static electricity.

Install the scanner away from strong magnetic fields and other sources of interference. Also, protect the scanner from static electricity as this might cause the scanner to malfunction.

Do not use aerosol sprays near the scanner.

Do not use aerosol sprays to clean the scanner. Aerosol sprays cause dirt and dust to enter the scanner, resulting in scanner failure and malfunction.

Avoid any contact when the scanner is in use.

Avoid touching any part of the scanner mechanism or paper when scanning as this may cause injuries.

Disconnect the power plug from the power outlet when the scanner is not used for a long period of time.

When the scanner is not used for a long period of time, be sure to disconnect the power plug from the power outlet for safety.

Do not install the scanner in the direct sunlight.

Do not install the scanner in the direct sunlight or near heating apparatus. Doing so might cause excessive heat to build up inside the scanner, causing fire or scanner trouble. Install the scanner in a well-ventilated location.

Do not carry the scanner alone.

When transporting the scanner, never carry it alone. The scanner is heavy.

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1 NAMES AND FUNCTIONS OF PARTS

This chapter describes names and functions of various parts of the scanner.

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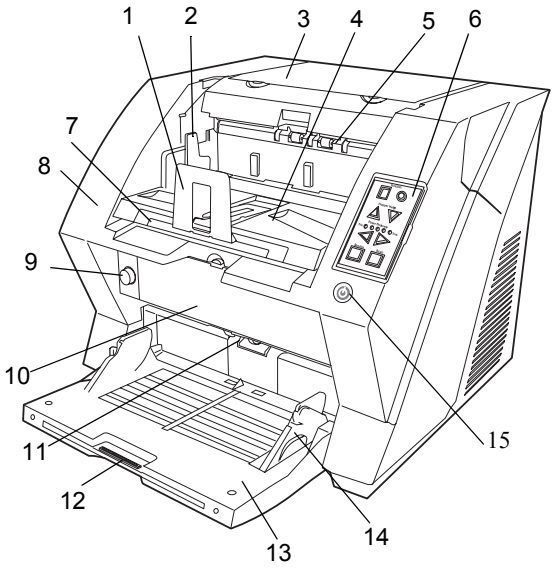
1.1 Names and Functions of Parts

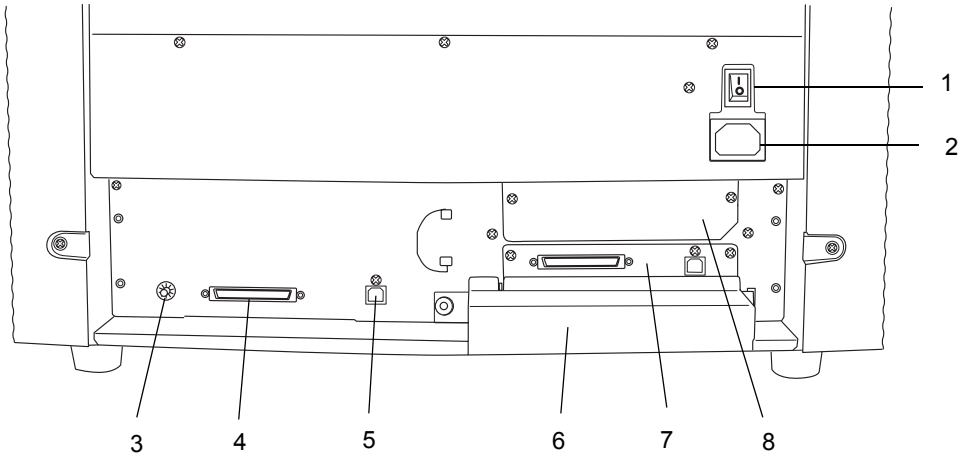
This section describes the names of parts.

■ Front side



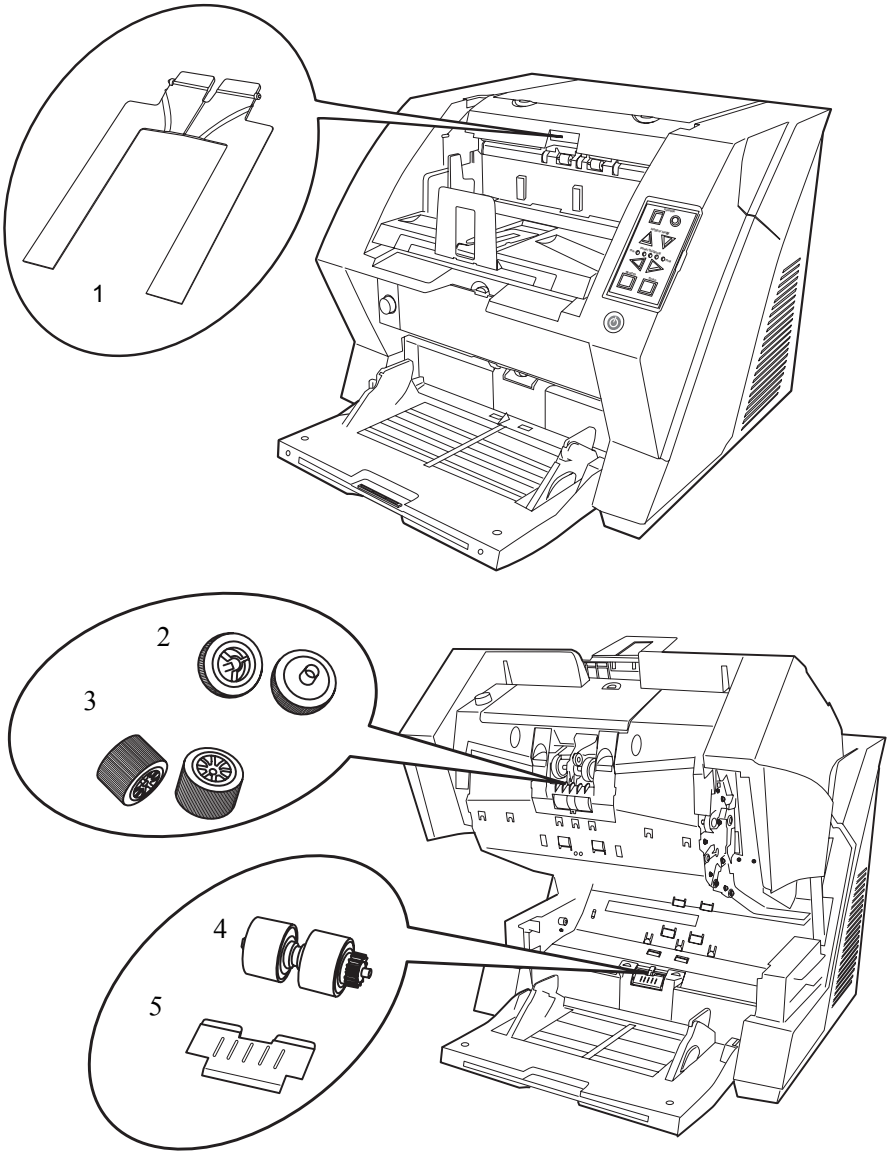
No.	Name	Function
1	Stopper	Prevents ejected documents from dropping off the scanner.
2	Stacker side guide	For aligning ejected documents to a certain width.
3	Top cover	Cover to access the consumables storage box and Post-Imprinter option (sold separately).
4	Stacker	Documents will be ejected into the Stacker after scanning.
5	Ejector	For ejecting the documents after scanning.
6	Operator panel	For operating the scanner.
7	Stacker extension	For scanning long documents. Pull the extension out according to the document's length.
8	ADF cover	Open the cover for cleaning the inner parts of the ADF or for replacing consumables.
9	ADF cover open button	Button used to open the ADF
10	Pre-imprinter cover	For the Pre imprinter option
11	ADF (Automatic document feeder)	The documents loaded onto the Hopper will be fed sheet by sheet for scanning.
12	Hopper extension	Pull the Hopper extension out for loading long documents.
13	Hopper	Documents to be scanned are loaded onto the Hopper.
14	Hopper side guides	Sheet Guides used to make sure that the paper to be scanned is fed into the scanner straight, avoiding skew.
15	Power button	Switch the scanner ON&OFF.

■ Rear side



No.	Name	Function
1	Main power switch	For switching the power supply ON/OFF.
2	Power connector	For connecting the AC cable.
3	SCSI ID Switch	Sets the scanner's SCSI ID.
4	SCSI connector	For connecting the SCSI cable.
5	USB connector	For connecting the USB cable.
6	Extended memory slot	For connecting an extension memory (sold separately). For details see section 9.4.
7	VRS slot	The VRS board has been installed in this slot.
8	Extended slot	A spare slot for a third party board

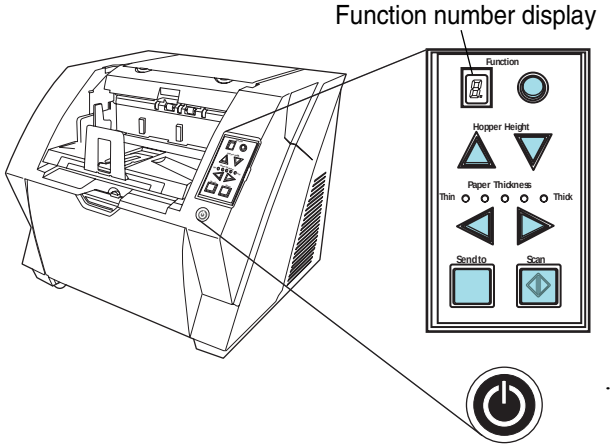
■ Removable Parts

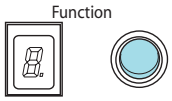
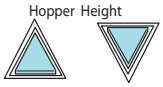
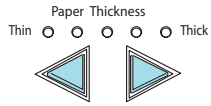


No.	Name	Description
1	Document smoother	Attached when the stacker position is set to align the ejected document by the leading edge (see page 24), or when scanning documents with different widths (see page 73).
2	Pick Rollers	Rollers that pick the paper from the hopper into the ADF. This is a consumable item.
3	Separator rollers	Roller used to help separate the paper as the feeding begins. This is a consumable item.
4	Brake rollers	Roller used to help separate the paper as the feeding begins. This is a consumable item.
5	Pad	Separation Pad used to help separate the paper as the feeding begins. This is a consumable item.

1.2 Operator panel

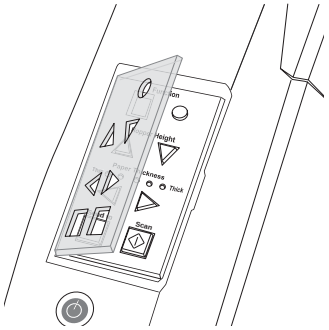
The operator panel is located on the right side of the scanner. The panel consists of a Function Number Display, buttons and LEDs.



Name	Function
Function Number display and Function button 	Shows the status of the scanner. For details, refer to "Indications on the Function Number Display" (page 6).
Hopper height adjustment button 	Use these buttons to adjust the height of the Hopper to the Upper/Middle/ Lower Positions. The hopper moves automatically to the right position after recieving a scanning command. However, this may cause a delay before the actual scanning starts. To avoid unnecessary waiting time, it is recommended to set the hopper height prior to scanning. For details, refer to “2.5 Setting the Hopper Height” on page 15.
Document thickness adjustment button 	Use this buttons, to set the paper thickness of the documents. (Normally no need to change from the default setting) For details, refer to “2.9 Setting the Paper Thickness” on page 29.
[Send to] button	Use this button to start linked application. (* About the settings, refer to section “2.14 Before Using [Scan] / [Send to] button” on page 64, or the FUJITSU TWAIN32 scanner driver help.
[Scan] button	
Power button	Use this button to turn the power ON/OFF. When the power is turned on, the button is illuminated in blue.

HINT

Operator Panel Overlays sheets in French, German, Italian, Spanish, Chinese, Russian and Korean are provided with the scanner. To change the overlay, open the plastic cover of the Operator Panel.



■ Indications on the Function Number Display

The following shows the indications on the Function Number Display.

No.	Descriptions
8	Lights only one time upon turning on the scanner.
P	Indicates that the scanner has been turned ON and is being initialized.
1	Indicates that initialization has been completed successfully. This status is called “Ready Status”.
U	Indicates that a temporary error (that users can solve) has occurred during the initialization or scanning of documents. “U” and an error number (1, 2, 6) are displayed alternately. To return the scanner to the ready status (“1”), press the “Scan” or “Send to” button while the error is indicated.
E	Indicates that a device alarm (that users can not solve) has occurred during the initialization or scanning of documents. “E” and an alarm number (2 to 9, and A, c, d, F) are indicated alternately. To return the scanner to the ready status (“1”), press “Scan” or “Send to” button. If this alarm occurs, turn the power off and then on again. If the alarm is indicated after turning on the power again, contact your service engineer.

2 BASIC SCANNER OPERATIONS

This chapter describes basic scanner operations.

This chapter explains operations using the screens of Windows XP. Depending on your OS, your PC's screen shots and the operation may be different from this manual. Be aware that when the FUJITSU TWAIN32 scanner driver, or the FUJITSU ISIS scanner driver is updated, the screens and operations noted in this chapter may be changed slightly. In this case, refer to the User's Guide provided with the update.

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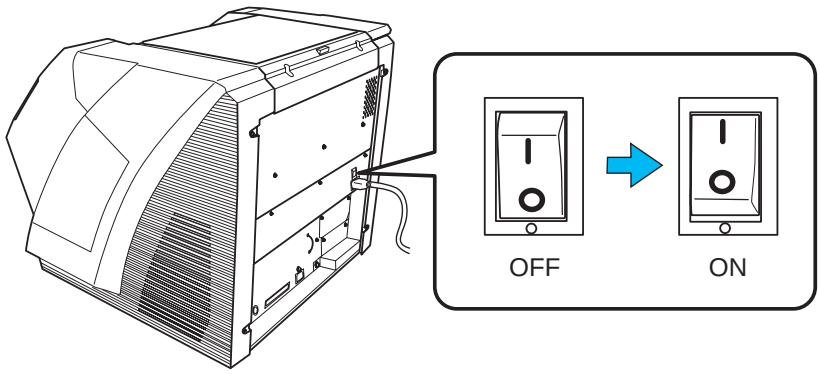
2.1 Turning the Scanner ON /OFF

■ Turning the Power ON

1. Press “I” side of the main power switch located on the back of the scanner.



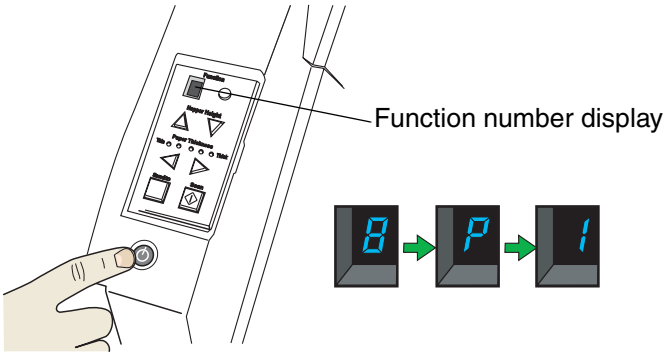
2. Open the Hopper.

HINT

- Refer to “2.2 Opening and Closing the Hopper” on page 10 to open the Hopper.
- Be sure to open the Hopper before turning on the scanner by the Power button.

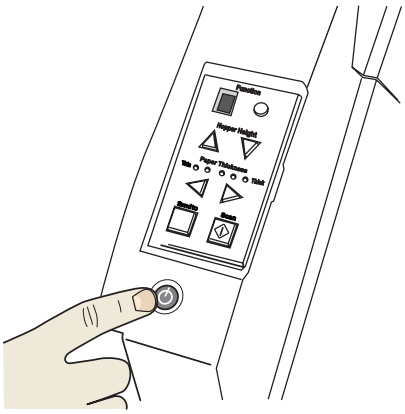
3. Press the Power button on the Operator panel.

The power turns on and the Power button lights up.
During initialization, the Function No. Display changes from “8” --> “P” to “1” in order. When “1” shows, it means the scanner is ready.



■ Turning the Power OFF

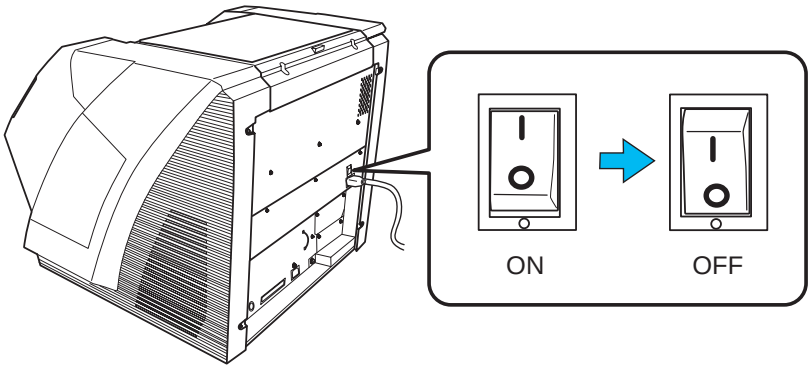
Hold the Power button for at least two seconds.



⇒The Power button light goes off and the scanner becomes disconnected.

HINT

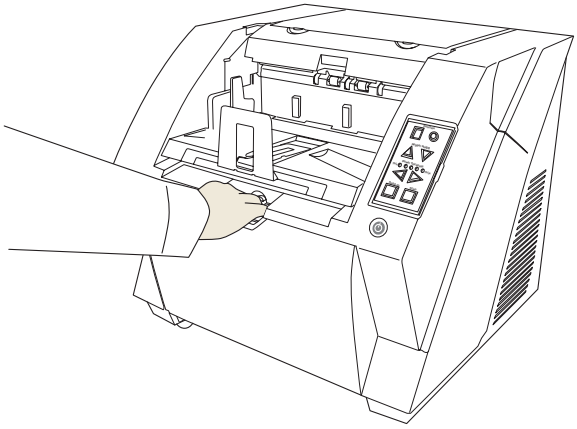
If the scanner will not be used for an extended period, turn off the scanner's main power switch on the back and unplug the power cable.



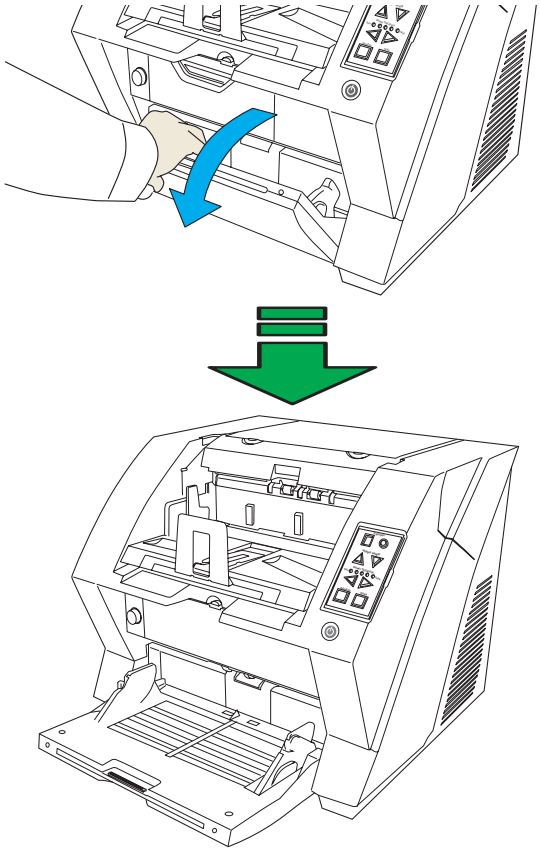
2.2 Opening and Closing the Hopper

■ Opening the Hopper

1. Hold the blue part located on the center of the Hopper.



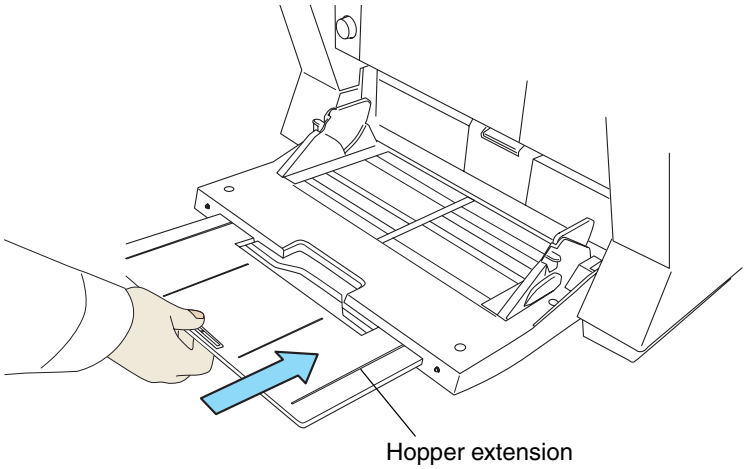
2. Flip down the Hopper gently.



■ Closing the Hopper

1. **Remove the document if there is any on the Hopper.**

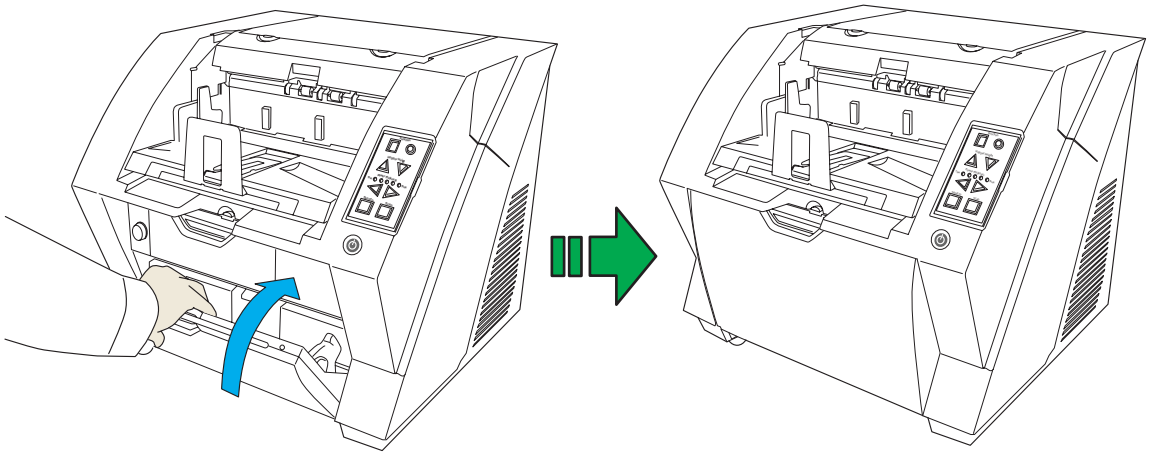
2. **Slide the extension in the Hopper.**



3. **Restore the original position of the hopper if the height of Hopper is adjusted.**

   Lower the hopper to the bottom by pressing the ▽button. (Refer to "2.5 Setting the Hopper Height" on page 15)

4. **Close the Hopper.**



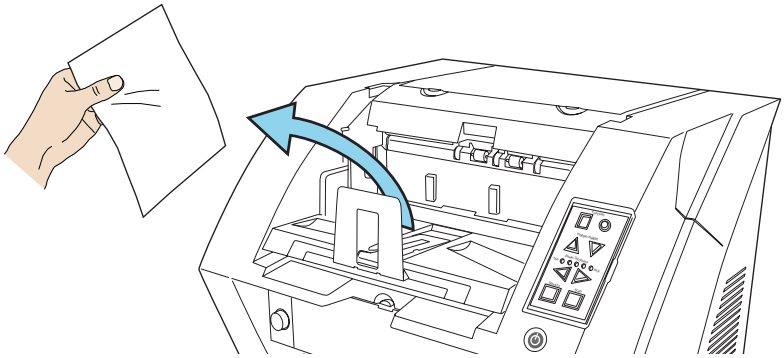
ATTENTION

Push the hopper until it's securely locked in place.

2.3 Opening and Closing ADF

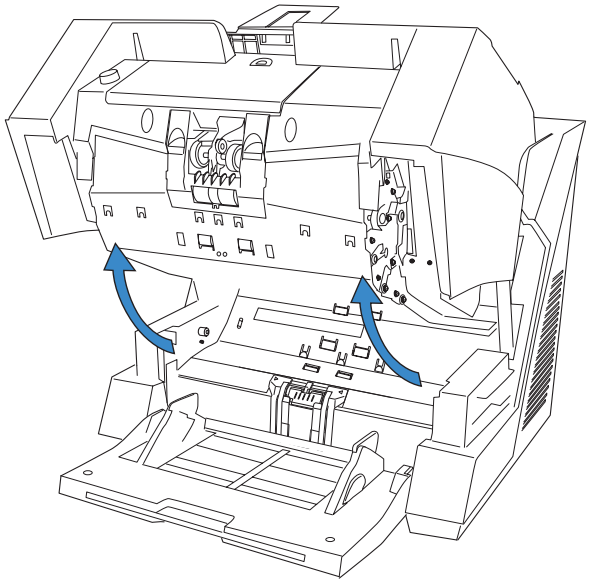
■ Opening ADF

1. Remove the document if there is any on the stacker.



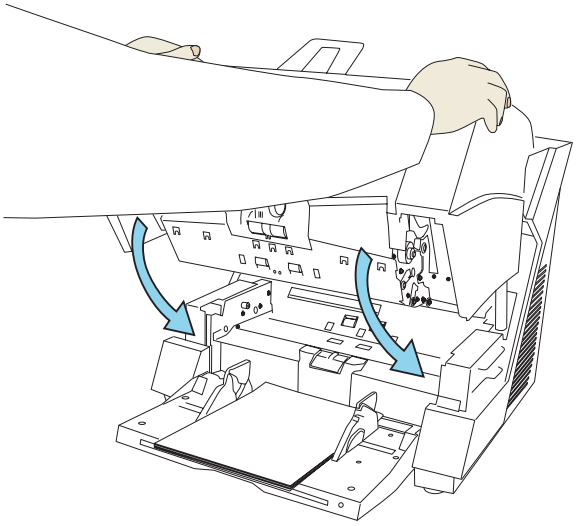
2. Press the ADF cover open button.

⇒The cover is slowly opened.



■ Closing ADF

1. Hold the ADF cover with both hands and press it down slowly.



Press the ADF cover until it is fixed.

ATTENTION

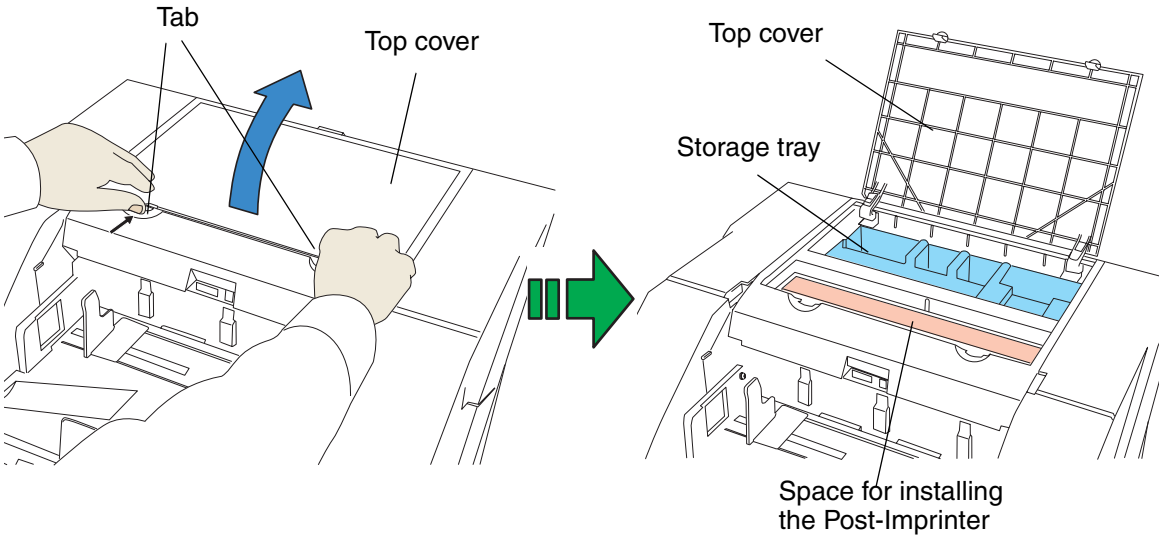
- When closing the ADF, be sure nothing is left inside of the ADF.
- Be careful not to pinch your fingers.

2.4 Opening and Closing Top Cover

Under the Top cover, there are a storage tray for storing the consumables and cleaning goods and a space for installing the Post-Imprinter. When you use the tray or access the Post-Imprinter, open the top cover as follows.

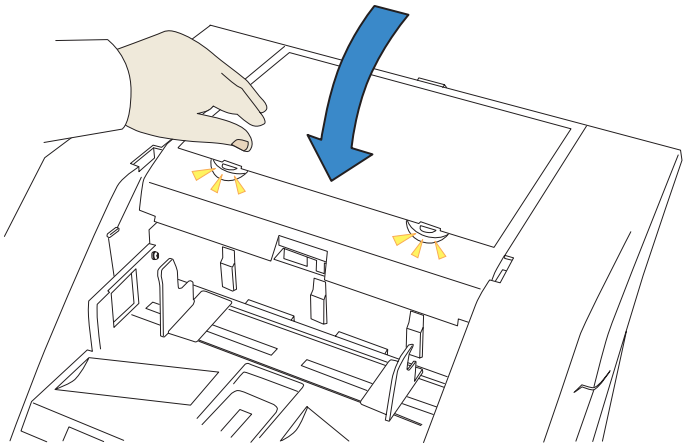
■ Opening the Top Cover

Press the tabs of the Top cover and open the top cover.



■ Closing the Top cover

Close the Top cover and press lightly until it is fixed with the tab.



2.5 Setting the Hopper Height

When there is no alarm (the function number display is showing “1”), the Hopper height can be adjusted. When the scanning load is not very heavy, setting the hopper higher will shorten the time it moves to the feeding position.

ATTENTION

- Do not touch the hopper when it is being adjusted. Your finger(s) may be pinched.
- Do not load anything onto the hopper when it is moving. If something gets into the mechanism, the scanner may be damaged.
- Do not place anything under the hopper. The hopper may collide with it and become damaged.
- Do not press the [Hopper Height] button (△▽) when the hopper is closed. The hopper may be damaged.

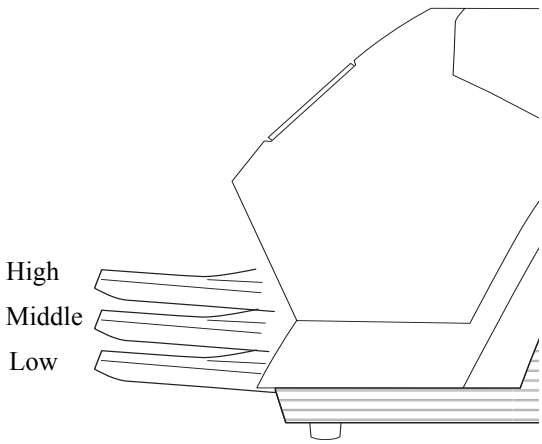
Adjustment is not possible when:

- The scanner is scanning
- The hopper is closed.
- When using Software Operation Panel (see page 166).

Three hopper heights are available and the corresponding capacities are as follows.

High:	Up to 100* sheets
Middle:	Up to 300* sheets
Low:	Up to 500* sheets

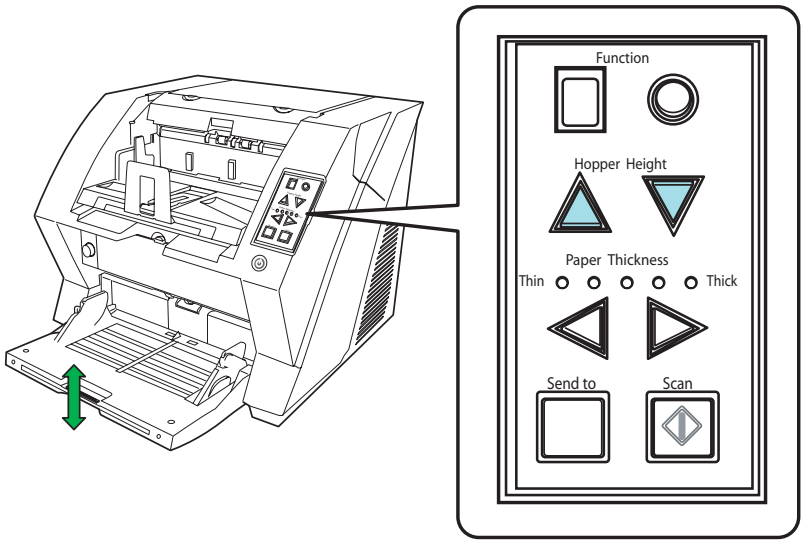
*: Estimated using paper of 80g/m^2.



HINT

Depending on the thickness of the document, the loading capacity differs. Refer to “7.3 Maximum Document Loading Capacity” on page 156.

The adjustment is done by using the Operator Panel on the scanner.



When you press the △ button, the hopper is raised one step higher.(Low→Middle→ High)
When pressing the ▽ button, the hopper is lowered one step lower.(High→Middle→ Low)

HINT

Immediately after the scanner is turned on, the Hopper is initially set to Low.

2.6 Loading Documents on the Hopper

■ Preparing the Document

1. Align both edges of the documents.

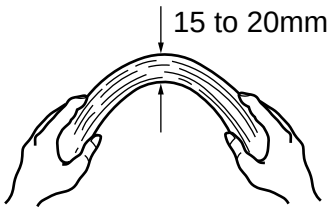
HINT

For how to scan the document with different widths, refer to "3.3 Scanning Documents with different widths" on page 73.

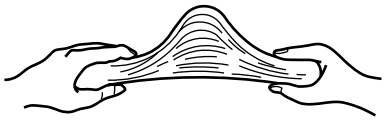
2. Fan the documents.

1) Take a stack of documents about 15mm to 20mm thick (1/2 to 3/4 inch).

2) Hold both ends and bend the documents into an arch.



3) Firmly holding the document with both hands, bend back the document as follows so that the bent section rises up in the middle of the document as follows.



4) Repeat steps 1) to 3) for a few times.

5) Rotate the document 90 degrees, and fan again.

3. Align the leading edges of the documents.

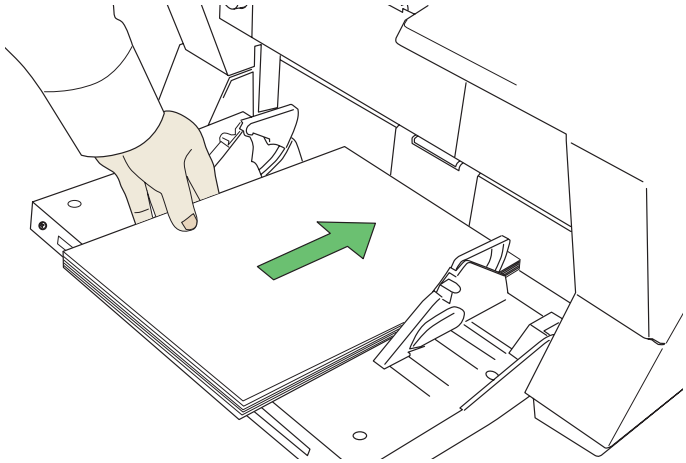
■ Setting the Document

There are 2 ways to set documents on the hopper.
(1) Set the document at the center of the hopper (mainly for document of equal size pages).
(2) Set the document by either side of the hopper (mainly for document of different size pages, or you want to align the document by the side instead of the center line).

(1) Setting the document at the center of the hopper

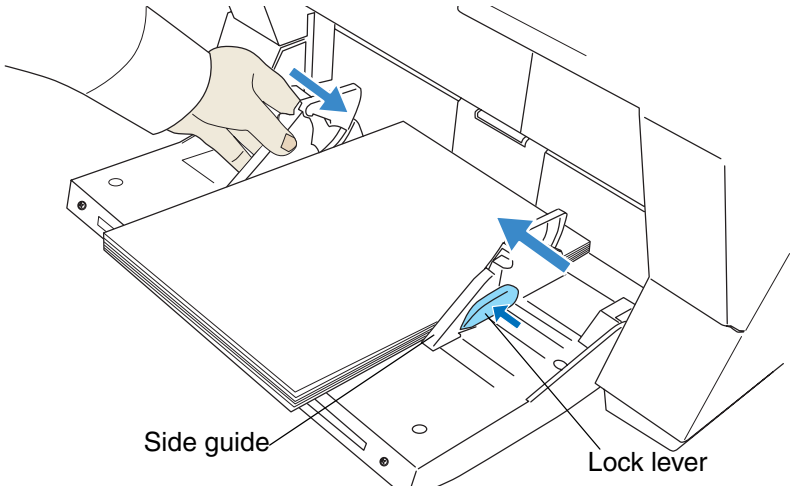
1. Load the document on the hopper.

Place the document face-up on the hopper.



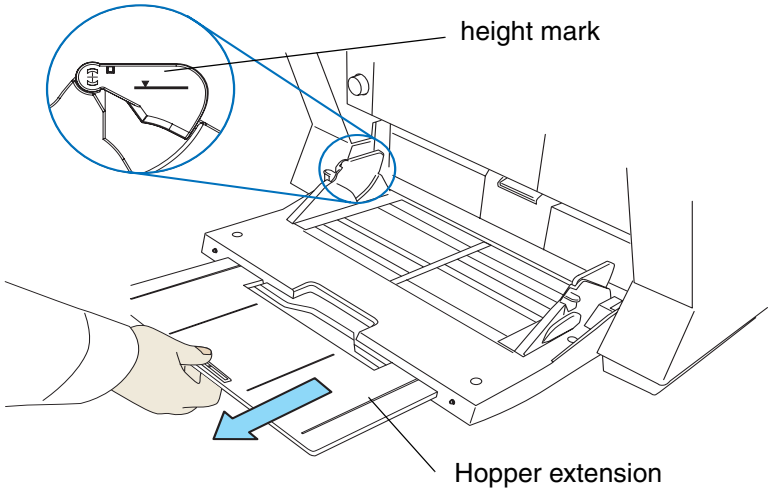
2. Adjust the Side guides to the document width.

Pressing the lock lever, slide the Side guides so that they contact the document sides.
If there is space between the document edges and the guides, the scanned images may be skewed.



ATTENTION

- Make sure that the document stack does not exceed the maximum height mark on the inner side of the Side guides.
- For long documents, use the hopper extension.



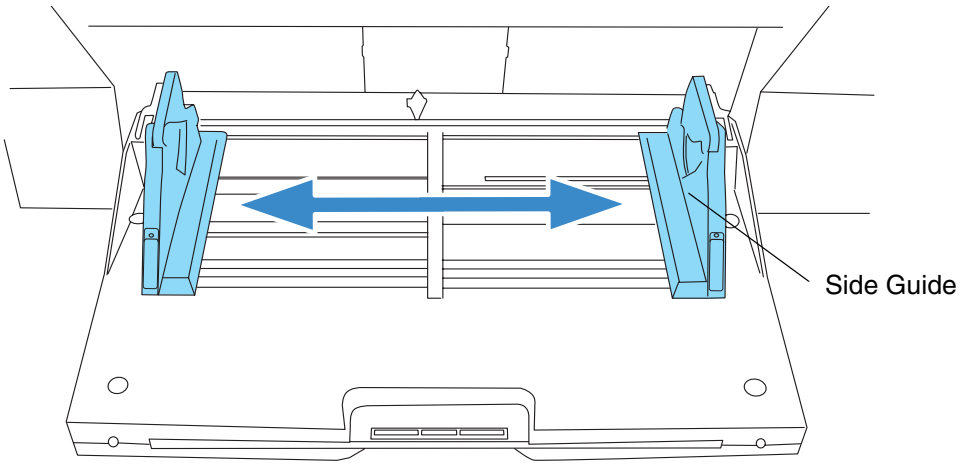
3. Start the scanner application and scan the document.

For the details on how to scan using ScandAll 21, refer to "2.10 Scanning Documents" on page 30.

(2)Setting the document by either Side Guide of the hopper.

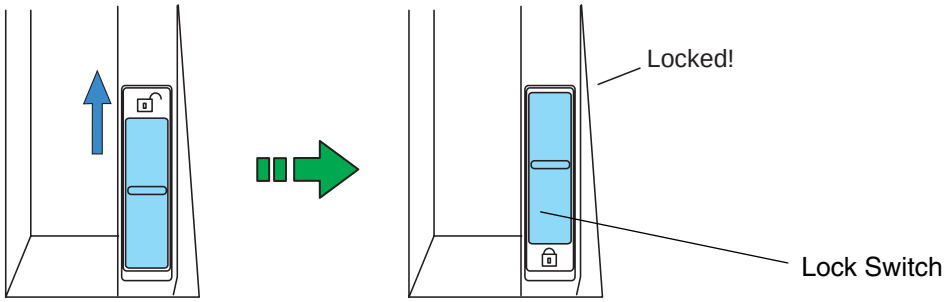
For scanning documents with pages of different sizes, see section "7.8 Scanning Mixed Documents" on page 162.

1. Move the hopper side guides to their outermost positions.

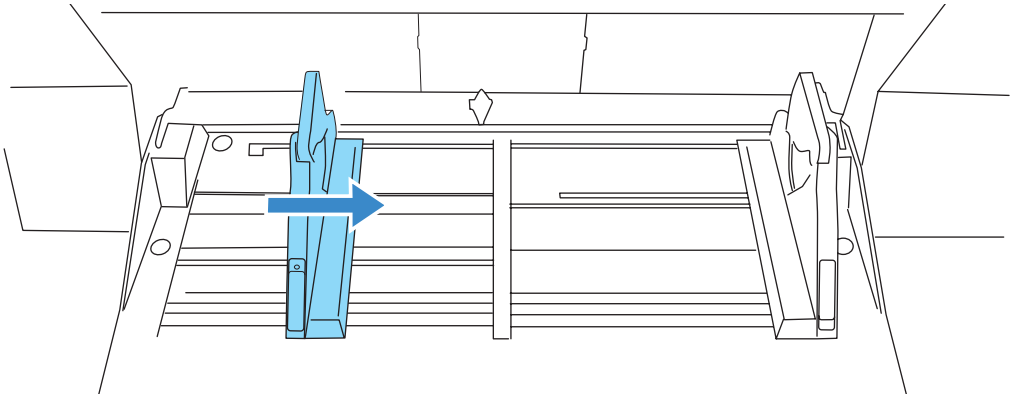


2. Lock the side guide not to be used.

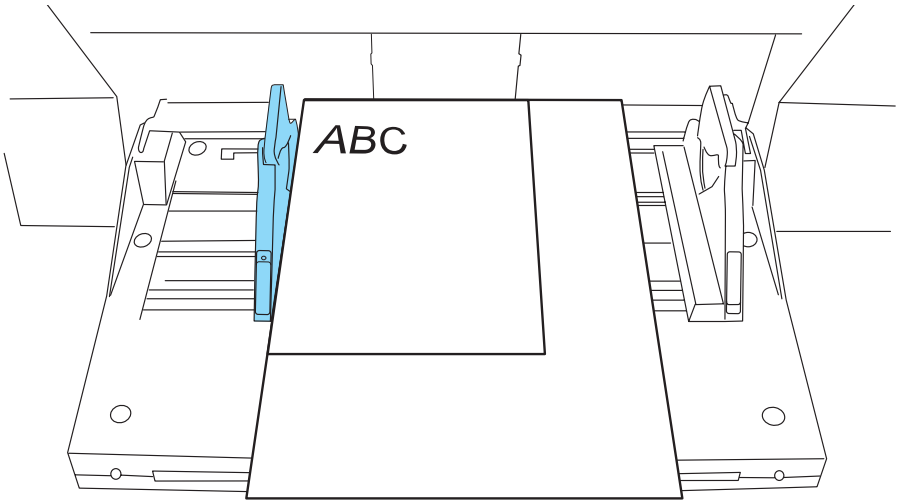
Flip up the lock switch on the front side of the side guide to lock it.



3. Move the other side guide to the desired position while pressing down the lock lever.

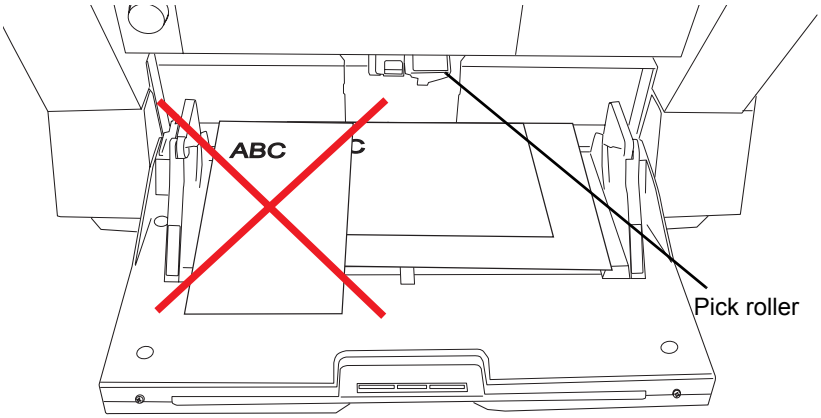


4. Set the document against the side guide.



ATTENTION

Make sure that all the pages fall under the pick roller. (Otherwise they will not be picked.).



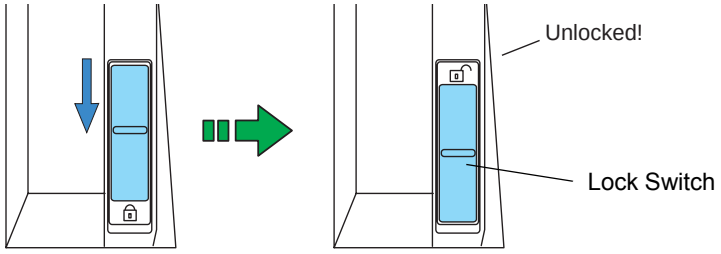
5. Start the scanner application and scan the document.

For the details on how to scan using ScandAll 21, refer to "2.10 Scanning Documents" on page 30

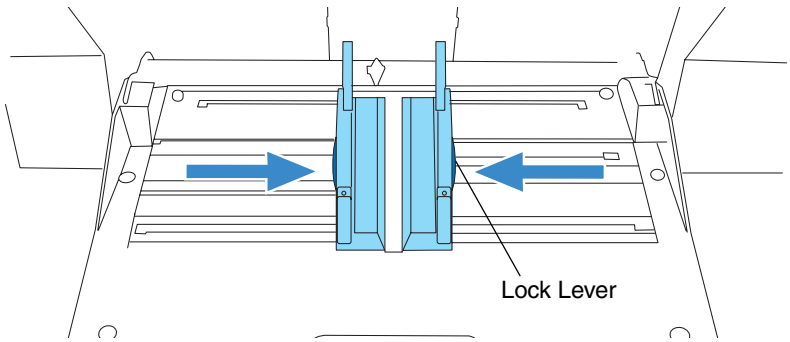
HINT

If you want to unlock side guides, follow the steps below:

- Release the locked side guide by flipping down the switch.



- Move both side guides toward the center while pressing the lock lever.



- Release the lever.

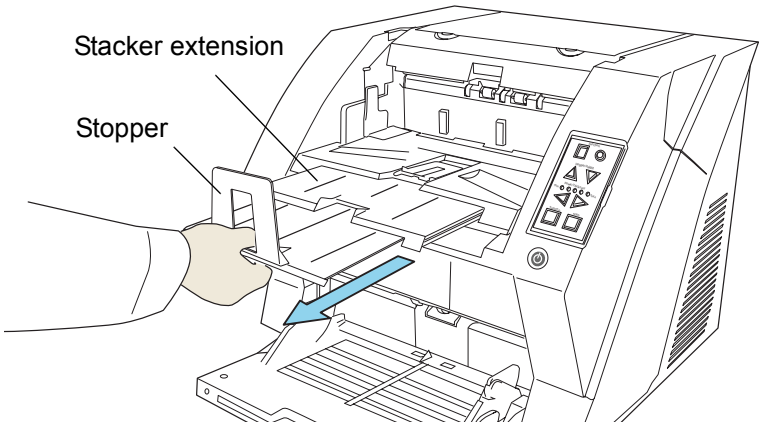
  ⇒Now the two sides will move symmetrically as before.

2.7 Setting up the Stacker

The document set on the hopper, once scanned, will be ejected onto the stacker.
The Stacker table is horizontal, as a default, for aligning the bottom edge of the ejected documents, You can tilled the Stacker table forward for aligning the leading edge of the ejected documents also.
Set up the Stacker by adjusting the Stacker extension, Stopper, Side Guides and Stacker's inclination.

■ Stacking the document

1. Pull out the stacker extension in accordance with document length.

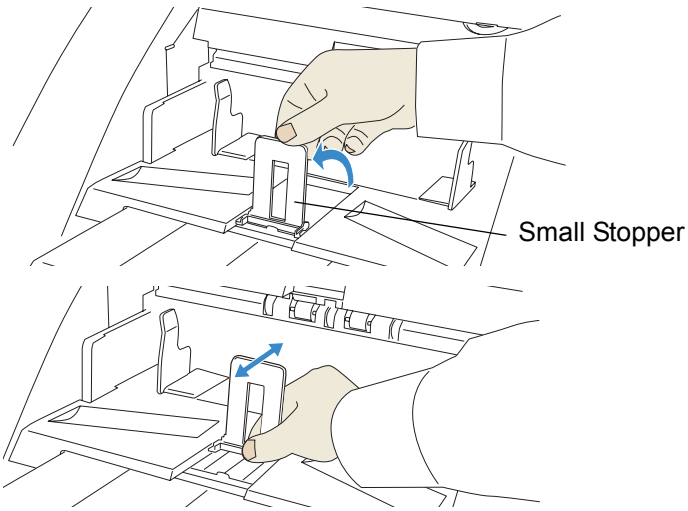


ATTENTION

- Do not use the stopper to pull out the stacker extension. It may be damaged.
- Be sure to extend the stopper longer than the document.

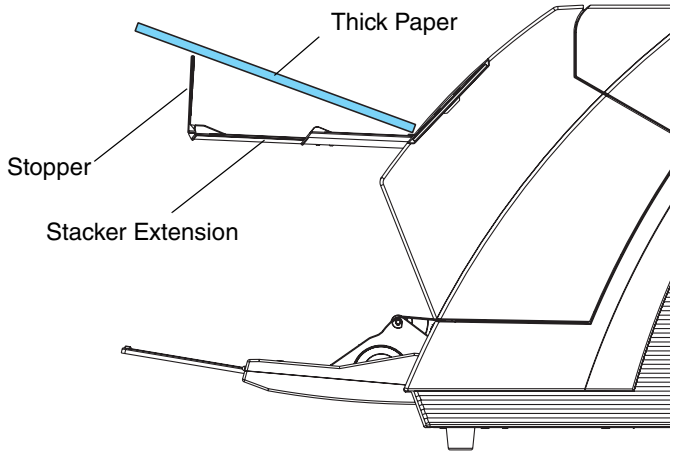
HINT

For short documents, use the small stopper.



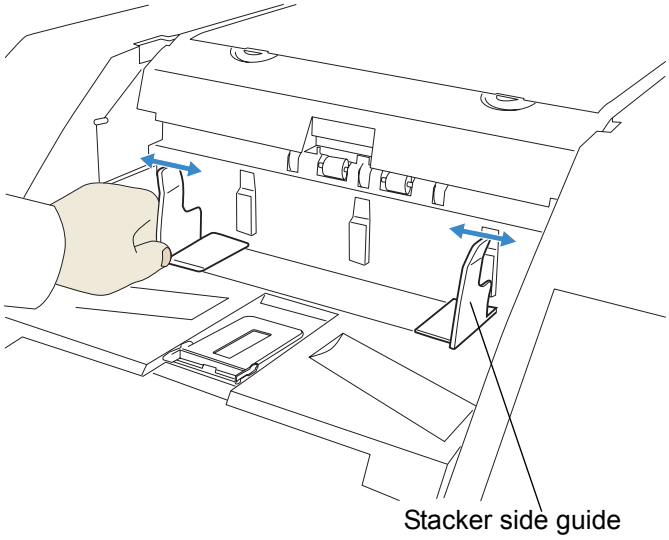
HINT

When scanning long pages (longer than A3), the document may be longer than the stacker extension even if it's pulled to the outermost position. In case like this, place a thick paper about the size of A4 on the stopper and make a slope as depicted below.



(The scanner can scan documents up to 863mm long.)

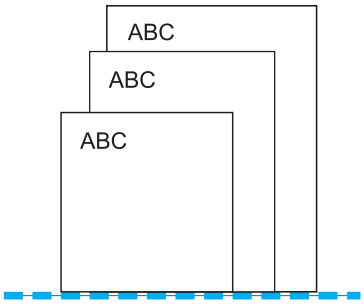
2. Adjust the stacker side guides to the document width.



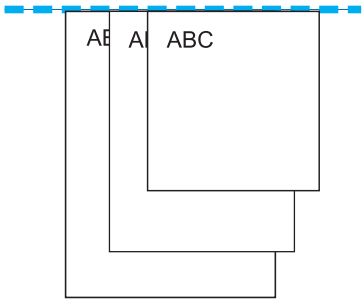
ATTENTION

Be sure to set the stacker side guides a little wider than the document width.

■ Switching the stacker's inclination



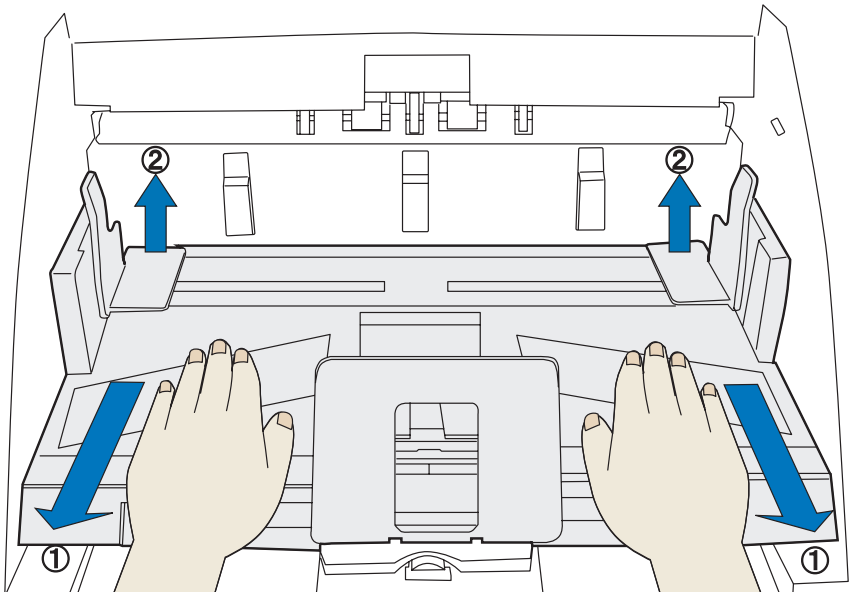
Bottom edge alignment by horizontal stacker setting



Leading edge alignment by tilting forward setting of stacker

<Switching to the tilting forward setting>

1. **Slide the stacker out towards you.**
2. **Push down the part of the stacker which is closer to you.**



⇒The stacker inclines towards you.

3. **Move your hands away from the stacker slowly.**

⇒The stacker will be fixed in a position tilting forward.

HINT

- When set to “Bottom edge” position, the stacker does not move up or down and becomes immovable even during scanning operation.
- In this position, the stacker’s maximum load will be 200 sheets.
- If the pages do not stack well, use the Document Smoother. (See next section.)

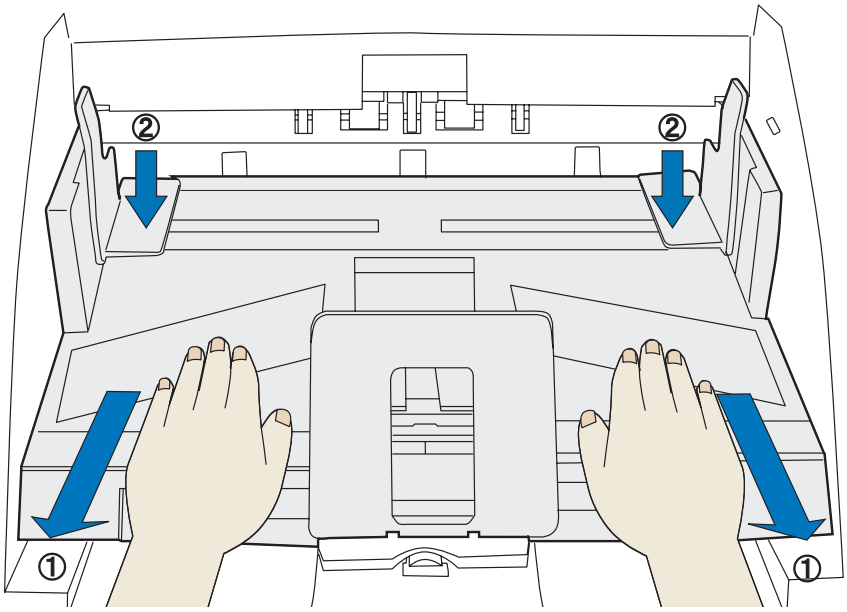
ATTENTION

When you align the documents from the leading edge (by tilting forward setting of stacker), the documents must meet the following conditions:

$$(Length) \div (Width) < 1.5$$

<Switching back to the horizontal setting

1. **Slide the stacker out towards you.**
2. **Push down the inner part of the stacker.**



⇒The stacker goes back into its horizontal position.

3. **Move your hands away from the stacker slowly.**

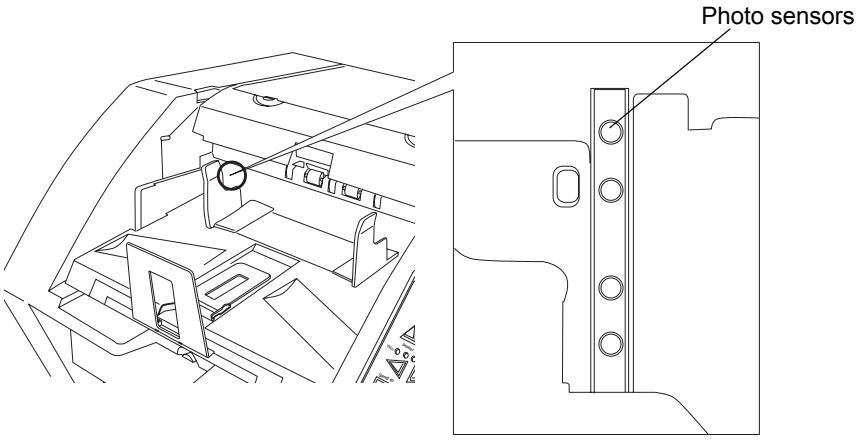
⇒The stacker will be fixed in a horizontal position.

HINT

- When set to the “bottom edge alignment” position, the stacker will automatically adjust its height according to its load.
- When set to the “Bottom edge alignment” position, the stacker’s maximum load will be 500 sheets.

ATTENTION

- On both sides walls of the stacker, photo sensors are installed to detect document height on the stacker. Make sure these sensors are not blocked.

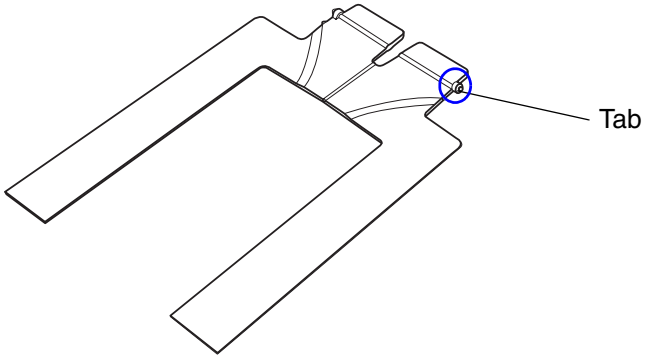


- The stacker may move up or down when the scanner is in the ready status up or when scanning starts. Do not touch the stacker or place anything on it at those times.

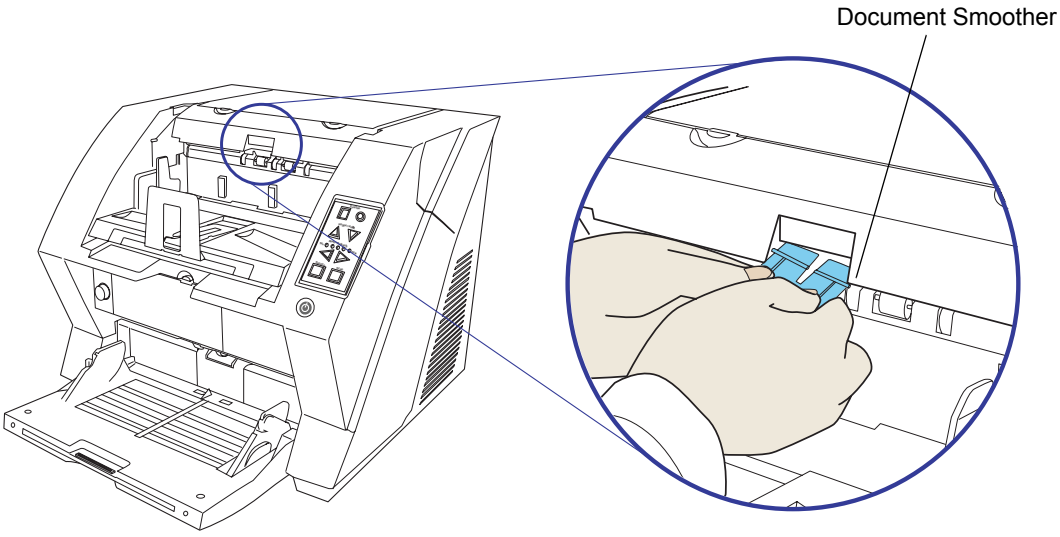
2.8 Using the Document smoother

The ejected document may not stack correctly when the stacker's angle is adjusted to the tilting forward setting (see previous section), or when scanning document of different size pages (see page 73). If that is the case, install the Document Smoother as described below.
The Document Smoother will suppress the splattering of ejected pages so they will stack correctly.

1. Prepare the Document Smoother.

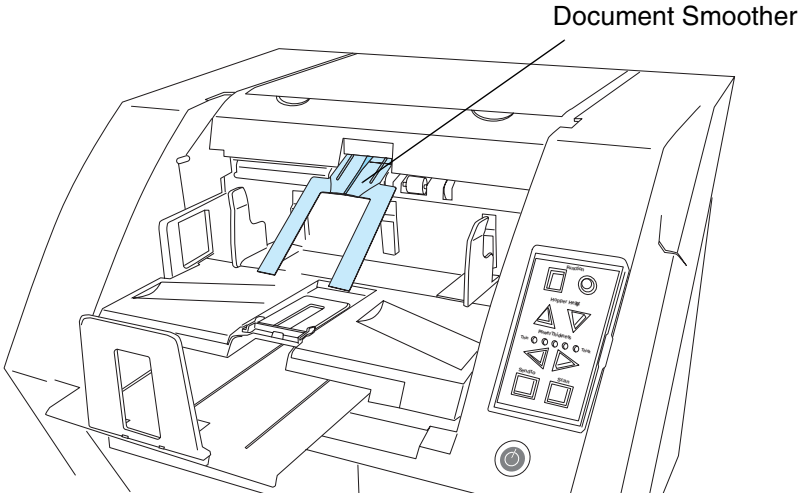


2. Insert one of the tabs into the slit in the scanner.



3. While bending the center part, insert the other tab into the scanner slit.

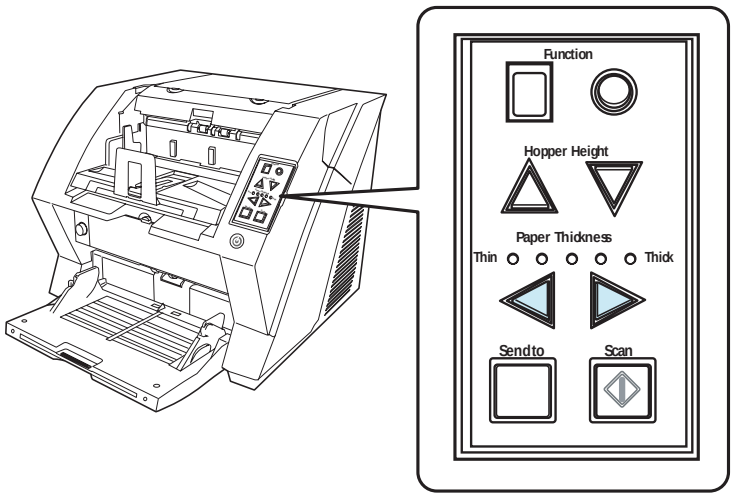
⇒It will look like this when installed.



2.9 Setting the Paper Thickness

When multifeeds or paper jam occurs frequently, adjust the paper thickness by using the Paper Thickness button on the operator's panel. (Under normal circumstances, use the default setting.)

Set the paper thickness on the Operator Panel.



When pressing the ▷ button, the scanner is set for one level thicker document.

When pressing the ◁ button, the scanner is set for one level thinner document.

The following five (5) steps of document thickness are selectable.

Thin Thick		
●❍❍❍❍:	Thin	↑ Prevent picking failure and paper jam
❍●❍❍❍:	Medium thin	
❍❍●❍❍:	Medium (Documents with thickness of 52 through 127g/m^2) <Default setting>	
❍❍❍●❍:	Medium thick	
❍❍❍❍●:	Thick	↓ Prevent multifeeding

HINT

- When multifeeds occur frequently, set the thickness level thicker.
- When picking failure or paper jams frequently occur, set the thickness level thinner.
- Multifeeds, picking failures and paper jams can also occur due to worn-out of the consumables and dirt of the rollers. When such problems are not cleared, change the consumables or clean inside of the scanner.

2.10 Scanning Documents

When scanning documents, normally you need to run the scanner driver using the application software. The following shows the procedure for scanning documents using the “ScandAll 21" application (simply called “ScandAll 21" from now on.)
The procedure differs depending on application being used. When you use an application other than ScandAll 21, refer to the manual attached to the application.

1. Load the documents on the hopper.

Refer to the section “2.6 Loading Documents on the Hopper” on page 17

2. Adjust the stacker table to the document size.

ATTENTION

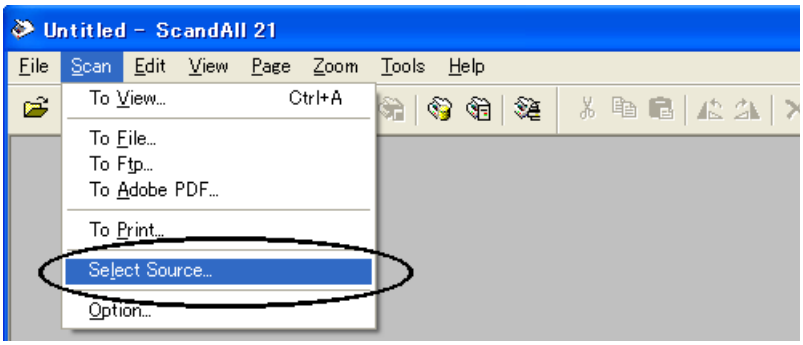
- When loading long documents on the hopper, extend the stacker extension.
- When loading short documents on the hopper, adjust the stacker length with the small stopper.

3. Start up ScandAll 21.

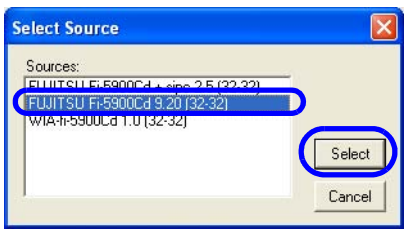
From the [Start] menu, select [Program] - [Scanner Utility for Microsoft Windows] - [ScandAll 21]. This starts up ScandAll 21.

4. Select the scanner to use.

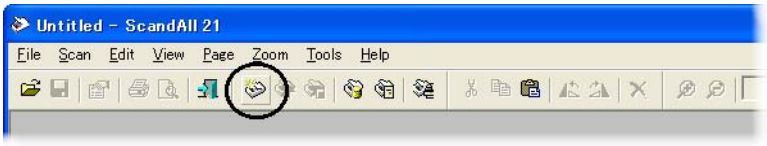
Select [Select Source] from the [Scan] menu.



The [Select source] dialog box appears.
Select [FUJITSU Fi-5900Cd] (for TWAIN32 V8, [FUJITSU TWAIN32]).
Then click [Select].



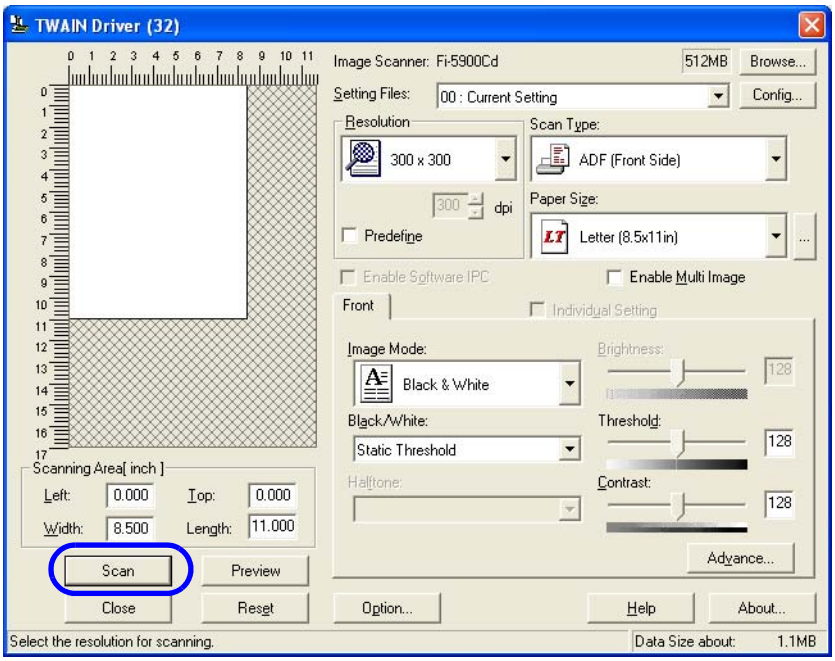
5. Click the [Scan to view] on the tool bar.



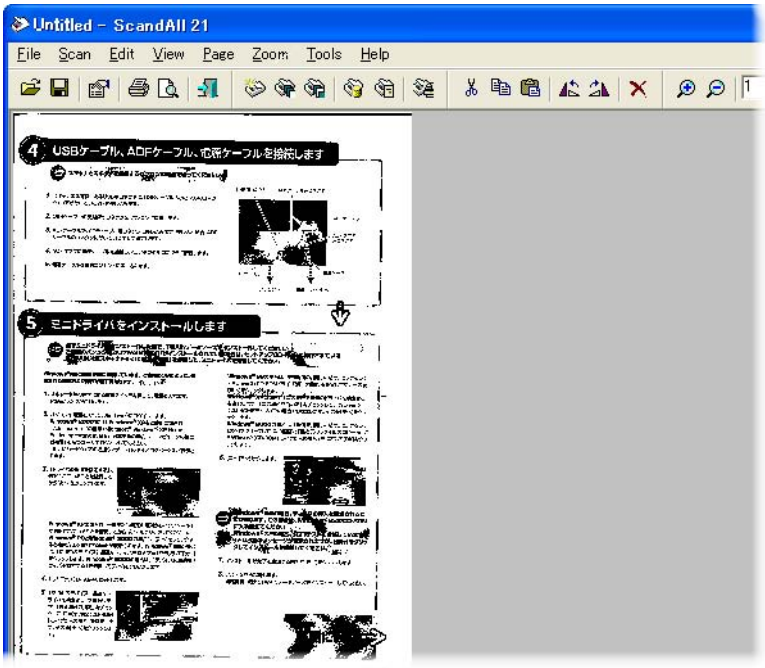
The [TWAIN Driver] dialog box (screen for setting scanning conditions) appears.

6. Set the scan resolution, document size and other scan conditions, and click the [Scan] button.

For the details on settings in the [TWAIN Driver] dialog box, refer to the "Scanner Utility for Microsoft Windows User's Guide" on the scanner driver CD-ROM.



The image of the scanned document appears on the ScandAll 21 screen.



For details on scanning various types of documents, refer to “3 SCANNING VARIOUS TYPES OF DOCUMENTS” on page 69.

For details on ScandAll 21 function and operations, refer to ScandAll 21 Help.

2.11 Starting Scanning with Button

Pressing the [Scan] / [Send to] button can start an application previously linked.
However, you need to set the application for [Scan] and [Send to] button referring to “2.14 Before Using [Scan] / [Send to] button” on page 64.

1. Load the documents on the hopper.

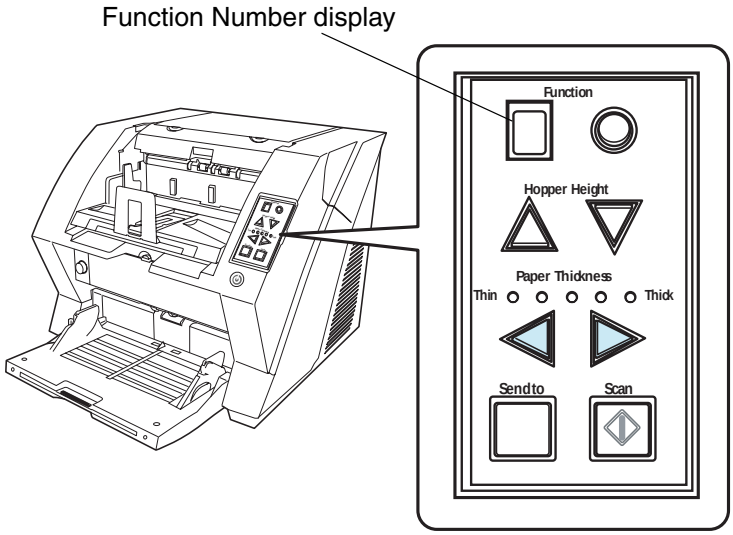
Refer to the section “2.6 Loading Documents on the Hopper” on page 17.

2. Adjust the stacker table to the document size.

Refer to “2.7 Setting up the Stacker” on page 22.

3. Press the [Scan] or [Send to] button.

When using the [Scan] button, press the button.
When using the [Send to] button, you can set from [Send to 1 to 9] of nine (9) kinds of settings. Each pressing the [Function] button increases the number of Function Number display as 1 → 2 → 3.... Set the number that links the application software you want to use for scanning and press the [Send to] button.



⇒The application previously set for the number is started.

ATTENTION

If the [Send to] button is pressed when "C" is displayed in the Function Number Display, the Software Operation Panel will start (see page 166).

2.12 Feeding Documents Manually

Besides the “Automatic Feed Mode” which automatically scans the document set on the hopper, the scanner can also scan documents in the “Manual Feed Mode”.
In addition, the “Manual Feed Mode” is divided into 2 types:

<1> Single Feed: Only one sheet is manually fed and scanned. This is suitable for

- thick paper, envelopes and folded paper and other types of documents that are difficult to scan using Automatic Feed Mode. (In case of folded paper, make the folding line as the leading edge).
- reducing the load on the hopper.
- making sure a certain page is scanned.

<2> Continuous Feed: Multiple sheets of document are manually fed one at a time and continuously scanned. This is suitable for

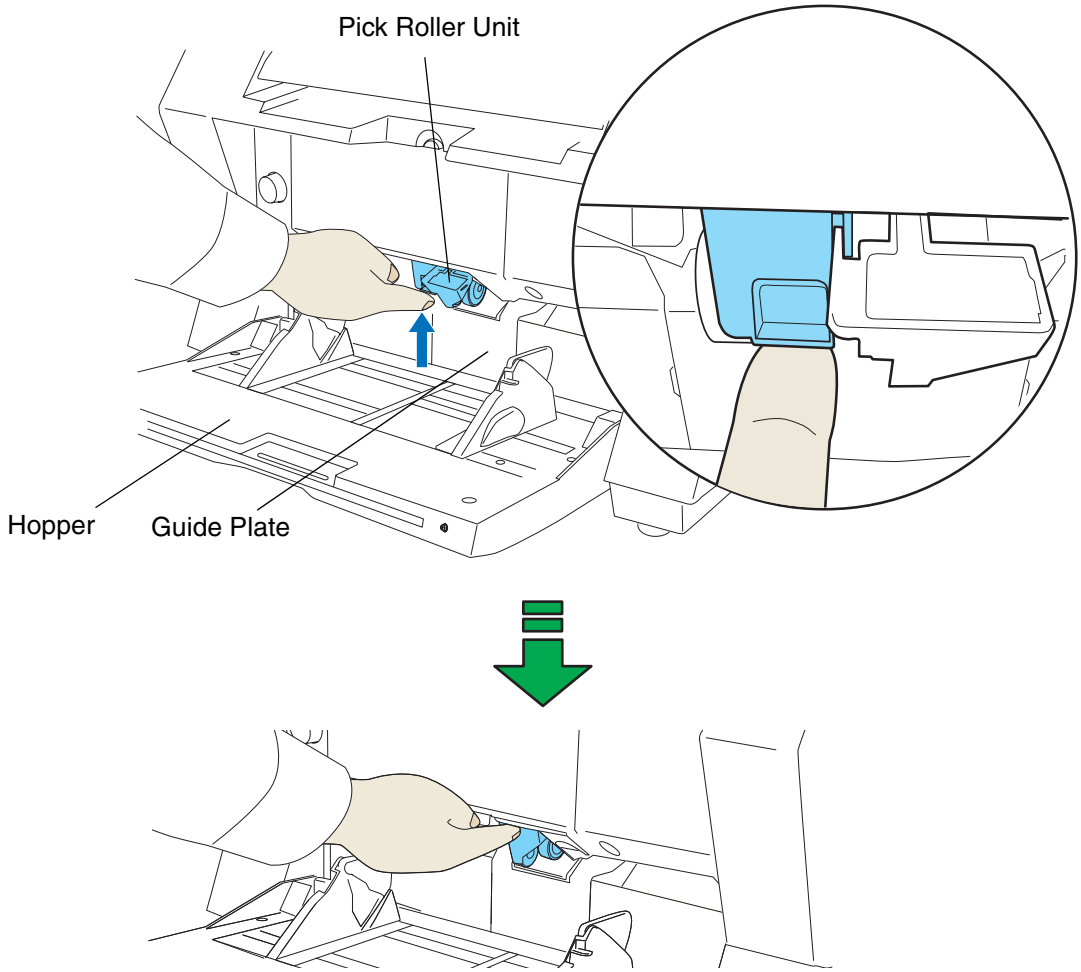
- manual feed, even if multiple sheets are mistakenly fed, the scanner will scan one at a time.
- selectively scanning a stack of document.
- making sure certain pages are scanned.

The procedure is described below.

■ Single Feed

1. Lift up the Pick roller unit.

Lift up the small plate on the left side using your finger.



⇒The Pick roller unit will click into place.
⇒The hopper will move up to the manual feed position.

ATTENTION

- If there is any document loaded on the Hopper, remove it before adjusting.
- Be careful not to get your fingers or anything caught in the mechanism when the hopper table moves up.

2. Place documents face-up at the center of the hopper table.

At this moment, do not stick the top edge of the document against the inner side of the hopper, instead set them a bit apart.

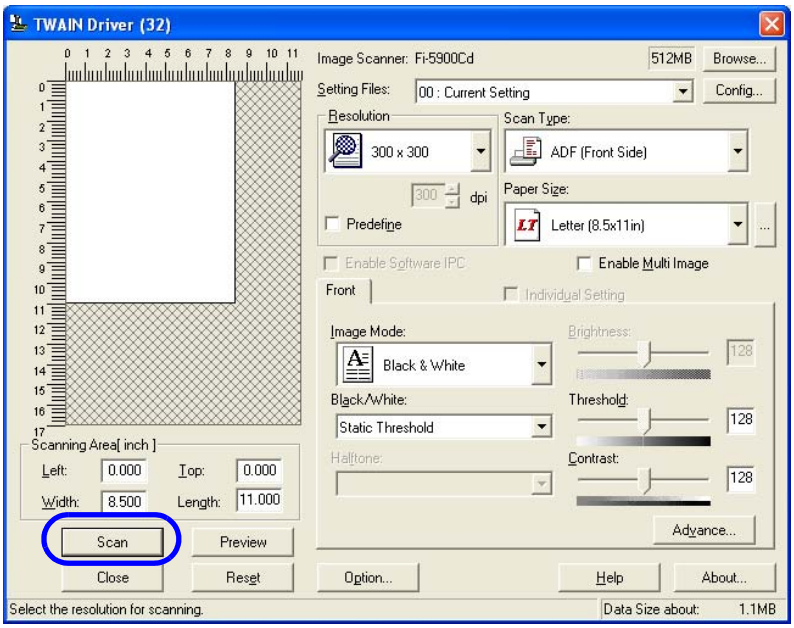
3. Start the application and display the scanner driver screen.

Set the scanning condition.

For the information about how to run the scanner driver, refer to “2.10 Scanning Documents” on page 30.

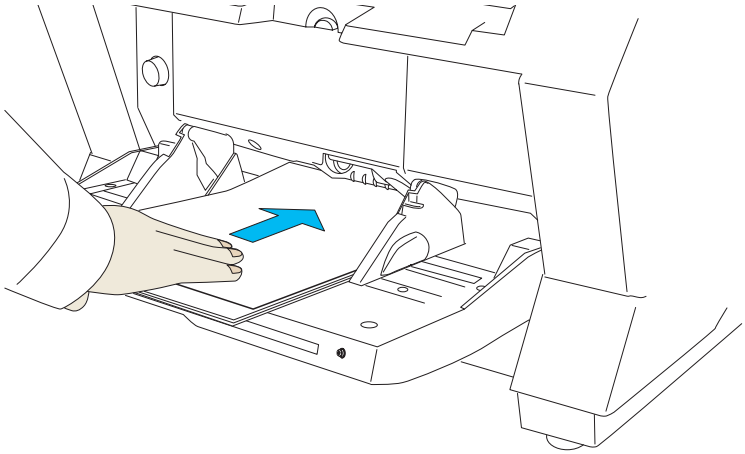
4. Start scanning.

When using the TWAIN driver, click the [Scan] button on the following screen.



5. Load the documents towards the back of the hopper.

When more than one sheet is loaded, only the one on the top of the stack will be fed.



The document is picked up and ejected onto the stacker after scanning.

6. Repeat the procedure 5 until all the documents are scanned.

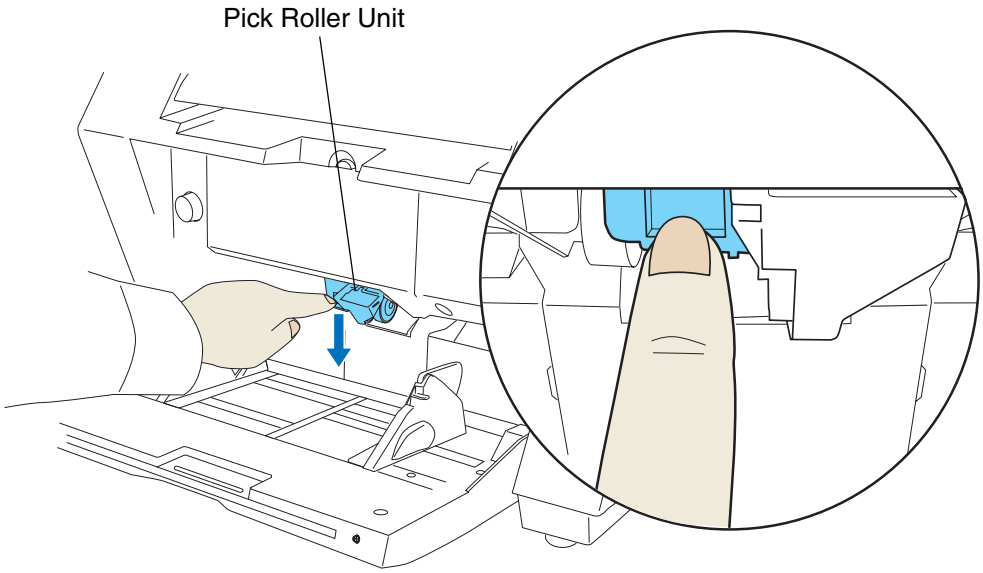
After a certain time period of inactivity, the scanner will automatically recognize it as “no document” and stop scanning.

HINT

For setting the timeout for feeding the document manually, refer to section “8.17 Timeout for Manual Feeding” on page 193.

7. To deactivate “Manual Feed Mode” (Single Feed), return the Pick roller unit to its original position.

Flip down the small plate on the left using your finger.

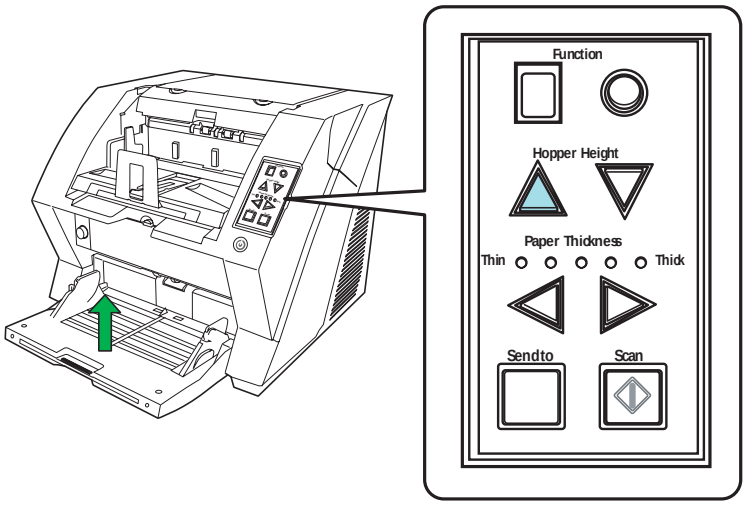


■ Continuous Feed

1. Open the hopper if it is closed.

Refer to section "2.2 Opening and Closing the Hopper" on page 10.

2. Press down the Hopper Height Button (△) on the Operator Panel for more than 3 seconds.



⇒Hopper will move up to the manual feed position.

ATTENTION

- Be careful not to get your fingers or anything caught in the mechanism when the hopper table moves up.
- To deactivate the "Manual Feed Mode" (Continuous Feed) in the middle of an operation, press down the Hopper Height Button (▽) on the Operator Panel for more than 3 seconds.

3. Place documents face-up at the center of the hopper table.

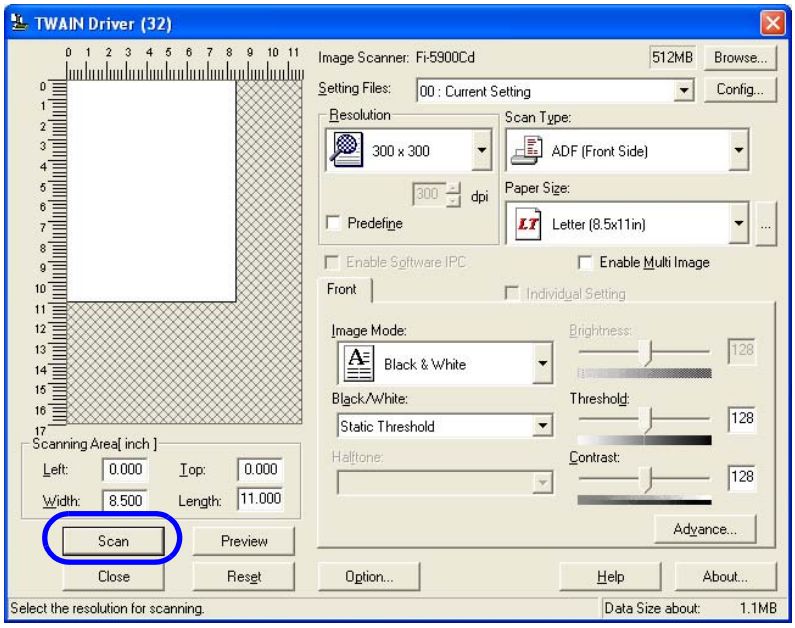
At this moment, do not stick the top edge of the document against the inner side of the hopper, instead set them a bit apart.

4. Start the application and display the scanner driver screen.

Set the scanning condition.
For the information about how to run the scanner driver, refer to "2.10 Scanning Documents" on page 30.

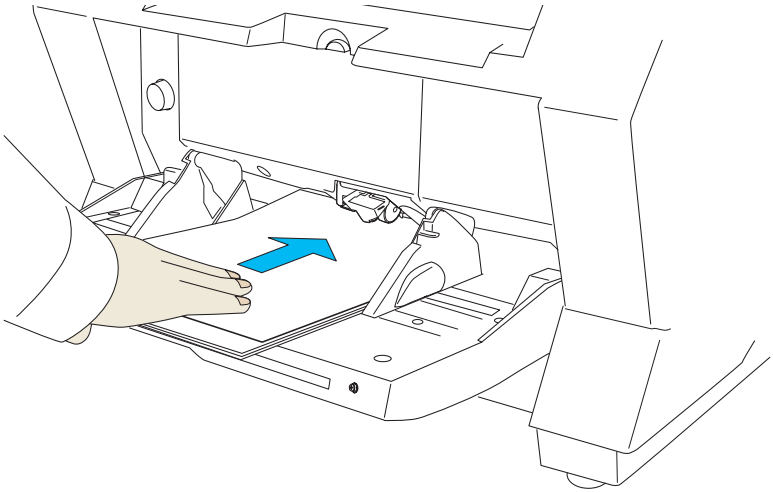
5. Start scanning.

When using the TWAIN driver, click the [Scan] button on the following screen.



6. Load the documents towards the back of the hopper.

When more than one sheet is loaded, only the one on the top of the stack will be fed.



The document is picked up and ejected onto the stacker after scanning.

HINT

In “Manual Feed Mode” (Continuous Feed), even if multiple sheets are mistakenly fed, the scanner will scan only one sheet at a time.

7. Repeat the procedure 6 until all the documents are scanned.

⇒After a certain time period of inactivity, the scanner will automatically recognize it as “no document” and stop scanning.

For setting the timeout for feeding the document manually, refer to section “8.17 Timeout for Manual Feeding” on page 193.

8. To deactivate the “Manual Feed Mode” (Continuous Feed), press down the Hopper Height Button (▽) on the Operator Panel for more than 3 seconds.

2.13 How to use the Scanner Driver

To scan the documents, a scanner driver and the application software that supports the driver are required. There are two drivers; “FUJITSU TWAIN32 Scanner Driver” in compliance with the TWAIN regulation and “FUJITSU ISIS Scanner Driver” in compliance with the ISIS regulation, come with fi-5900C.

This section explains how to use each driver using the attached application.

■ FUJITSU TWAIN32 Scanner Driver

FUJITSU TWAIN32 Scanner Driver is designed for scanning documents with FUJITSU image scanner fi series by using application software that complies with the TWAIN standard.
The following describes the procedure with examples of ScandAll 21 for ordinary scanning by using this driver software.

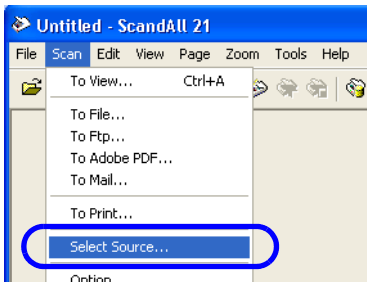
● Procedure for Basic Scanning Operation

1. Start up the application.

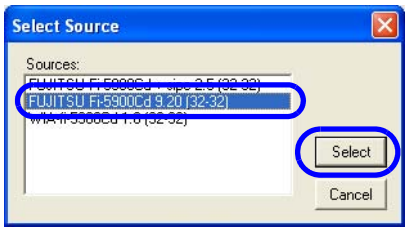
From the [Start] menu, select [Programs]-[Scanner Utility for Microsoft Window] and click [ScandAll 21].

2. Select your scanner on the window below.

Select [Select Source] from the [Scan] menu.



3. Select the scanner to use, then click the [Select] button.



Select

•[FUJITSU Fi-5900Cd] for FUJITSU TWAIN32 V9

or

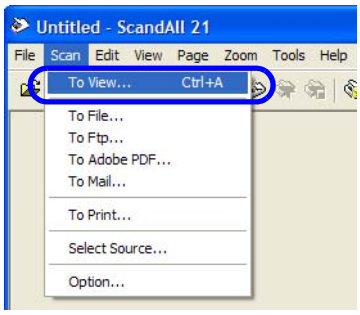
•[FUJITSU TWAIN32] for FUJITSU TWAIN32 V8

then click the [Select] button.

4. Load the documents on the scanner.

For details on loading documents, refer to "2.6 Loading Documents on the Hopper" on page 2-17.

5. Open the TWAIN Driver window.



Select [Scan To View] from the [Scan] menu.

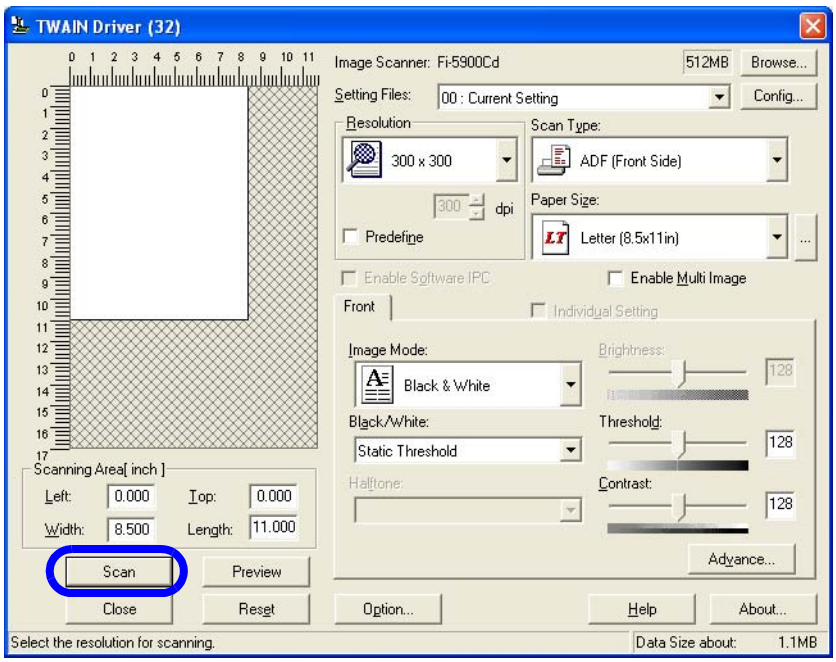
HINT

ScandAll 21 provides scanning methods as follows:

- [To View...]:Displays scanned images on the window.
- [To File...:]:Saves scanned images as files (*.BMP, *.TIF, *.JPG) on your hard disk.
- [To FTP...:]:Transfers scanned images to a FTP server.
- [To Adobe PDF...:]:Saves scanned images as PDF files. (*Adobe Acrobat must be installed beforehand.)
- [To Microsoft Share Point Portal Server...]:Transfers scanned images to Microsoft Share Point Portal Server.
- [To Mail...]:Launches mailer software and attaches scanned images to e-mail.

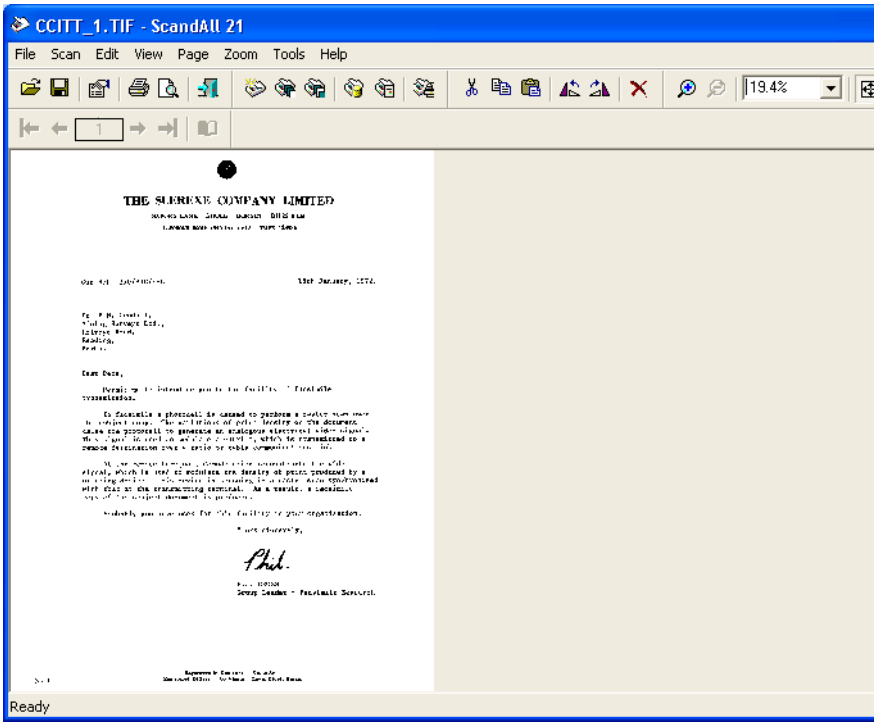
For details, refer to “ScandAll 21 Help”.

6. Configure settings for scanning and click the [Scan] button.



For details about the settings on this window, refer to "Setting Window for FUJITSU TWAIN32 Scanner Driver" on page 44.

⇒The images of scanned documents are displayed on the [ScandAll 21] window.



Depending on the settings of the application software, images may not be displayed.
For details, refer to the documentation or Help file of your application.
e.x.) When you select [To File...] from the [Scan] menu of ScandAll 21, images of scanned documents are not displayed on the window.

7. Save the scanned images.

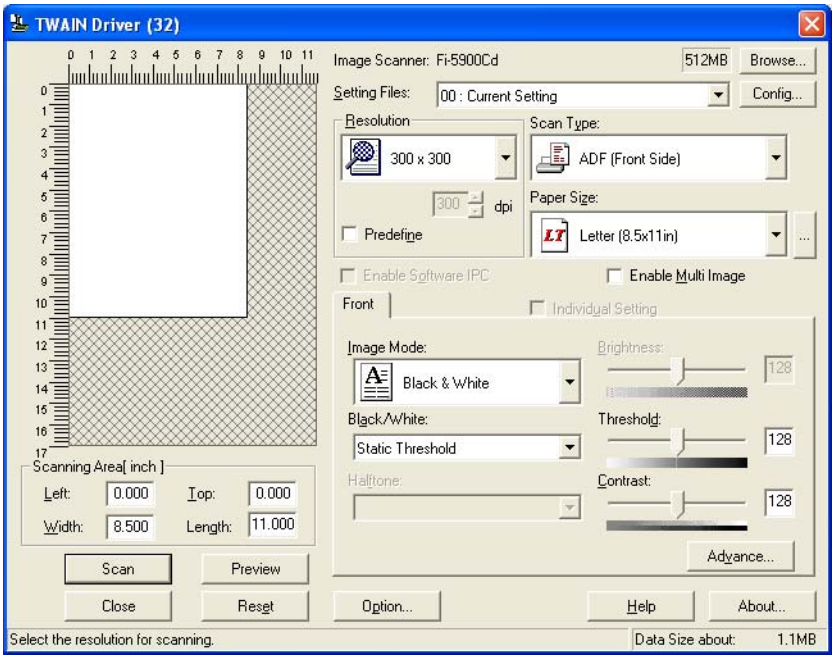
Select [Save As...] from the [File] menu to save the scanned images.

If you wish to start another scanning, return to procedure 4.

8. End the application.

Select [Exit] from the [File] menu.

● Setting Window for FUJITSU TWAIN32 Scanner Driver



You can perform settings for the FUJITSU TWAIN32 Scanner Driver on this window.
The following describes the main setting items.

- For details on each functions, refer to "FUJITSU TWAIN32 Scanner Driver Help" (appears by pressing [Help] or [F1] button).

Resolution

Specifies the resolution of scanning.
It can be specified by selecting a default value from the list or customizing (specifies any resolution in 1 dpi unit, within a range of 50 ~ 600 dpi).
By marking the [Predefine] checkbox, you can select one from three predefined settings as [Normal], [Fine], [Super Fine] to scan documents instead of setting details by yourself.
Otherwise, you can change the details of the predefined settings on the [Resolution Setting] window, which appears when you click on the [...] button.

Scan Type

Specifies the feeding method, the side(s) to be scanned (Front Side, Back Side, Duplex) or details of Long page (the size of documents longer than Ledger/A3).

Paper Size

Select the size of documents to be scanned from this list.
Windows for customizing the paper size will appear when you click on [...] besides the list. You can save any document size as a customized setting (up to three) or for changing the order of the paper size in the list.

Image Mode

Specifies the image type for the scanned documents.

Black & White	Documents are scanned in binary (black and white).
Halftone	Documents are scanned with halftone processing in black and white.
Gray scale	Documents are scanned in gradations from black to white. For this mode you can select 256 gradations or 4 bit (16 gradations).
Color	Documents are scanned in color. For this mode, you can select 24 bit Color, 256 bit Color or 8bit Color.

[Scan] button

Starts scanning documents with the current settings.

[Preview] button

Documents are scanned preliminarily before the actual scanning.
You can confirm the image of the documents in the preview window.

[Close] button

Saves the current settings and closes this window.

[Reset] button

Used to undo changes of settings.

[Help] button

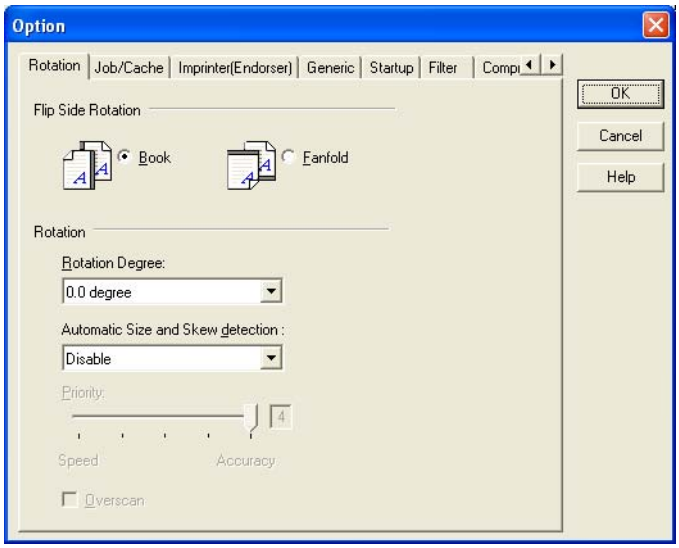
Opens the “FUJITSU TWAIN32 Scanner Driver Help” window. The window also opens by pushing the [F1] key.

[About...] button

Opens an information window about the FUJITSU TWAIN32 Scanner Driver's version.

[Option...] button

You can set up the details of optional functions on the window below.



[Rotation] tab

Select this tab when setting image rotation, detection of document size and skew, etc.

[Job/Cache] tab

Select this tab when setting cache mode, job controls, multifeed detection, blank page skipping, etc.

[Imprinter (Endorser)] tab

Select this tab when setting printing configuration for imprinter (sold separately). Only shows when an imprinter is installed.

[Startup] tab

Select this tab for setting the Scanner Operation Panel.

[Generic] tab

Select this tab to change the unit displayed on the Setting Window for the FUJITSU TWAIN32 Scanner Driver. (Millimeters, Inches, and Pixels are available)

[Filter] tab

Select this tab for setting the image processing filter(s).

Page Edge Filler: Fills up the margins of the scanned documents with a selected color.

Digital Endoser: A character string, such as the alphabet and numbers, can be added in the scanned document.

[Compression] tab

Select this tab for setting the compression rate of JPEG Transfer.

[Advance...] button

Click this button for settings of the advanced image processing.

You can set Edge Extract, Gamma Pattern, White Level Follower, Dropout Color, Reverse, etc.

[Config...] button

Click this button for configuring the Setting Files.
You can save the changed settings as a Setting File. From next scanning, the settings are quickly changed by using these Setting Files.

For details of each function, refer to the "FUJITSU TWAIN32 Scanner Driver Help".

■ FUJITSU ISIS Scanner Driver

FUJITSU ISIS Scanner Driver is designed for scanning documents with FUJITSU image scanner fi series by using application software that complies with the ISIS standard.

The following describes the procedure with examples of QuickScan™ for ordinary scanning by using this driver software.

The procedure may vary depending on your application. If you use an application other than QuickScan™, refer to its Guide or Help for further information.

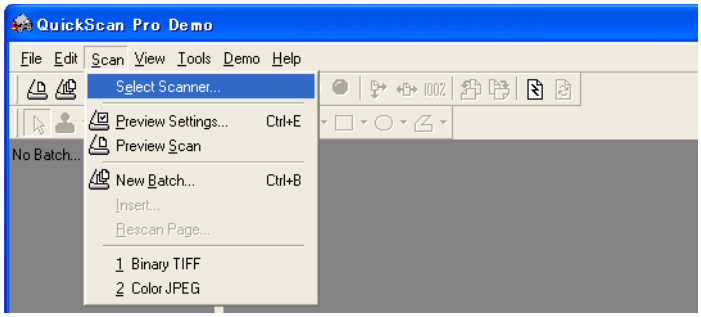
● Procedure for Basic Scanning Operation

1. Start up the application.

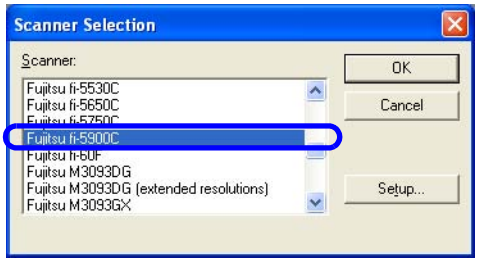
From the [Start] menu, select [All Programs]-[QuickScan] and click [QuickScan].

2. From the menu bar, select [Scan] - [Select Scanner].

⇒The following window appears.

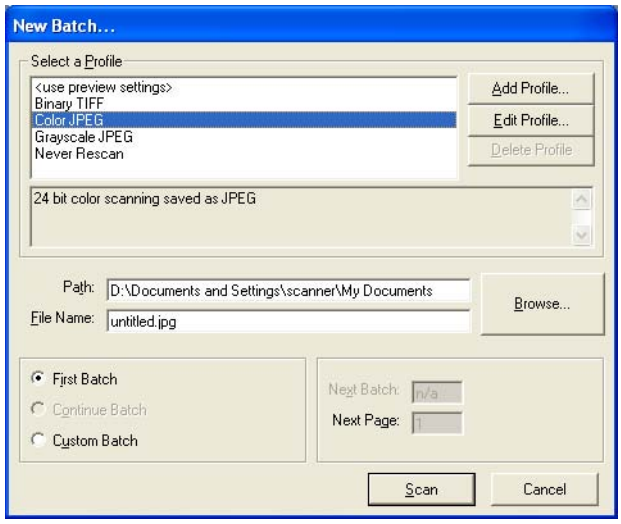


3. Select fi-5900C, then click the [OK] button.



4. Select [Scan] - [New Batch...] on the menu bar.

5. On the following window, select the profile for scanning.



- When creating a new profile

  Select one from already existing profiles and click [Add Profile...] button.

  ⇒A new profile will be created based on the profile you select.

- When changing the settings of already existing profiles

  Select one from already existing profiles and click [Edit Profile...] button.

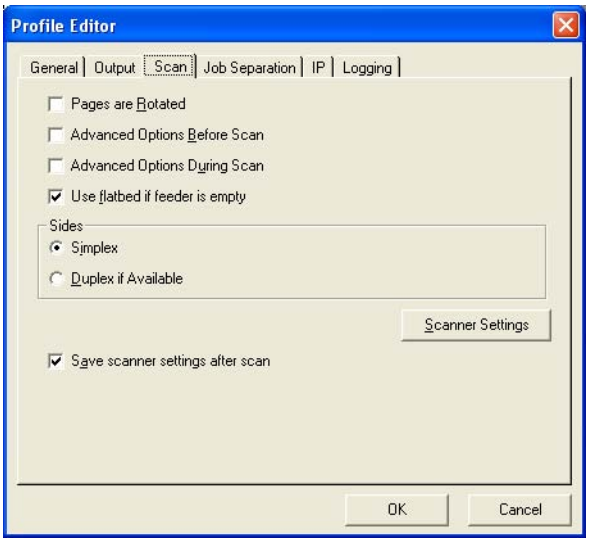
  ⇒The settings of the selected profile can be changed.

- When using an existing profile, select one of the profiles.

  ⇒Scanning will be done with the selected profile's settings.

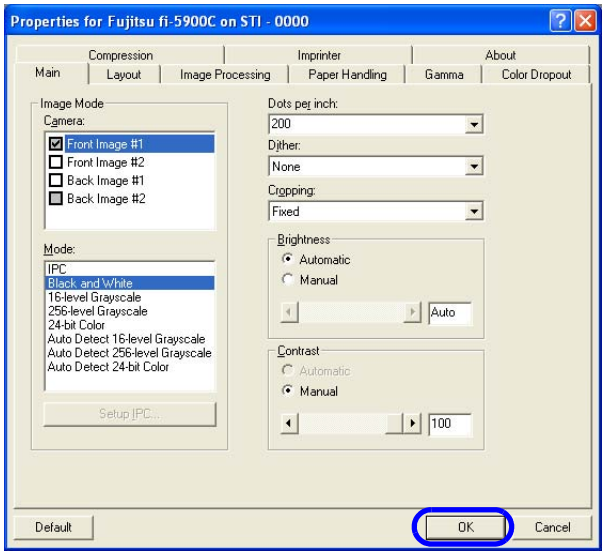
  ⇒Go to the procedure 9.

6. Select the [Scan] tab and click the [Scanner Settings] on the [Profile Editor] window.



⇒The configuration window of ISIS driver appears.

7. **Configure settings for scanning and click the [OK] button.**

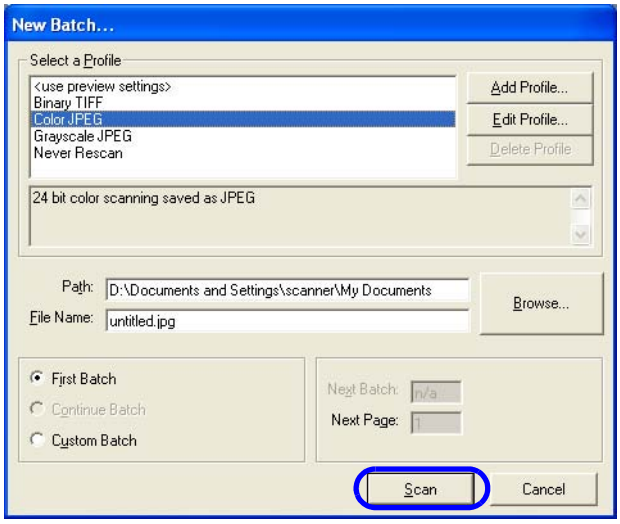


For details on this dialog box, refer to "Configuration Window of FUJITSU ISIS Scanner Driver" on page 51.

8. **On the [Profile Editor] window, click the [OK] button to return to [New batch...] dialog.**

9. **Load the documents on the hopper.**

10. **Click the [Scan] button to start scanning.**

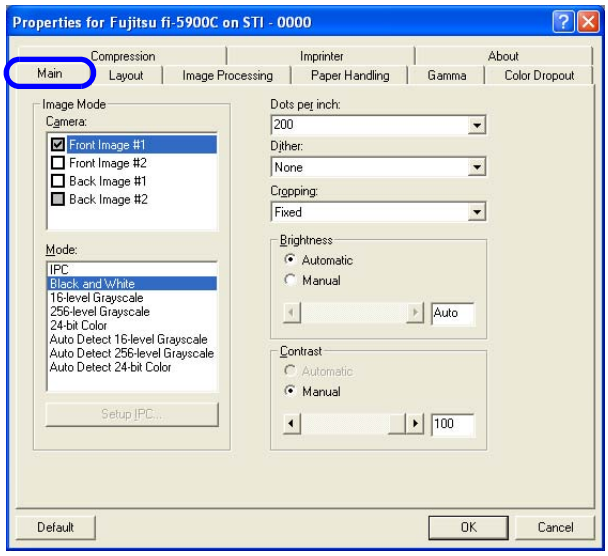


⇒Scanned images are displayed on the window.

Refer to the “QuickScan Overview” or the “QuickScan Help” for further information on functions and operations of QuickScan. After the installation of QuickScan, it is registered in the [Start] menu.

● Configuration Window of FUJITSU ISIS Scanner Driver

[Main] tab



Camera

Selects the document's side (front or back) to be scanned.
The check-marked side(s) will be scanned.
By marking only the checkbox(es) of Front Image, you can scan the one side of the documents (simplex scan), and by marking the checkboxes of both Front and Back Images, you can scan the both sides of the documents (duplex scan).
Moreover, you can select color/gray scale scanning and black and white scanning (#1/#2) for both the Front and Back Images so that two different types of images are output at a scan. (Multi Image)
The settings you have made on this window are applied to the selected side(s) (Front Image #1, Front Image #2, Back Image #1, and/or Back Image #2).

HINT

If you select color or gray scale mode for a side (Front or Back) #1, you can select only black and white mode for the same side #2. In turn, if you select black and white mode for a side (Front or Back) #1, you can select either color or gray scale mode for the same side #2.

Mode

Select a color mode suitable for the purpose from the menu.

Image Processing	Scans data in binary (black and white) using Image Processing Software Option. When this mode is selected, the [Setup IPC...] button below becomes available. (Note that only when Image Processing Software Option is installed in the computer, it is displayed.)
Black and White	Scans data in binary (black and white). Distinguishes black from white according to the fixed threshold. This scanning mode is suitable for scanning line drawings and text documents.
16-level Gray	Scans data with 16 gradations from black to white. This mode uses 4 bits per pixel.
256-level Gray	Scans data with 256 gradations from black to white. This mode uses 8 bits per pixel.
24-bit Color	Scans data as full-color images using 24 bits per pixel. This mode is suitable for scanning color photographs. However, more memory space is needed compared to gray scale scanning.
Auto Detect 16-/256-level, Auto Detect 24-bit Color	Distinguishes between color data and black and white data, and outputs documents as they are; that is, color data is output in color (or gray scale) mode and white and black data is output in black and white mode. Configure settings for color documents using Front/Back Image #1, and for black and white documents using Front/Back Image #2, under “Camera”.

[Setup IPC] button

You can configure settings for scanning with Image Processing Software Option.

For details on how to configure settings for Image Processing Software Option, refer to "Image Processing Software Option User's Guide".
To display the "Image Processing Software Option User's Guide", select [Start] > [All Programs] > [Image Processing Software Option] > [User's Guide].

Dots per inch

Specifies the number of pixels (dots) per inch.
Select a fixed resolution from the list or input a number from 50 to 600.
The higher the resolution, the more memory is required.

Dither

Select the halftone pattern for halftone scanning. This setting is available when “Black and White” is selected in the “Mode”.

Dither Pattern 1	This setting is suitable for scanning dark photographs.
Dither Pattern 2	This setting is suitable for scanning dark-colored documents containing both text and photographs.
Dither Pattern 3	This setting is suitable for scanning light photographs.
Dither Pattern 4	This setting is suitable for scanning light-colored documents containing both text and photographs.
Error Diffusion	This function minimizes the differences of color levels.

Cropping

Select how to crop scanned documents to output.

Fixed	Outputs the document in the specified size.
Detect Length	Detects the rear end of the document to scan the whole length of the document. When shorter pages are included in the document, the output images of them are adjusted to the original size.
Automatic	Automatically detects the paper size of the document and outputs in the original size. In addition, document skews are automatically detected and corrected to output the image data.
Deskew	Corrects document skews after scanning to output correct image data.

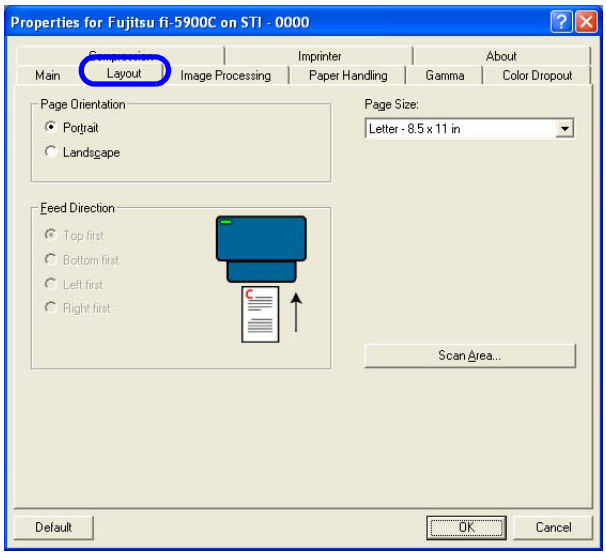
Brightness

Sets the brightness of the entire image. Specify the brightness as a number within the range of 1 (dark) to 255 (bright). To brighten the entire image, increase the value of the setting. To darken the entire image, decrease the value.

Contrast

Sets the contrast between light and shadow of the scanned image. Specify the contrast as a number within the range of 1 (low [soft]) to 100 (high [sharp]). Increasing this value makes the contrast sharper.

[Layout] tab



Page Orientation

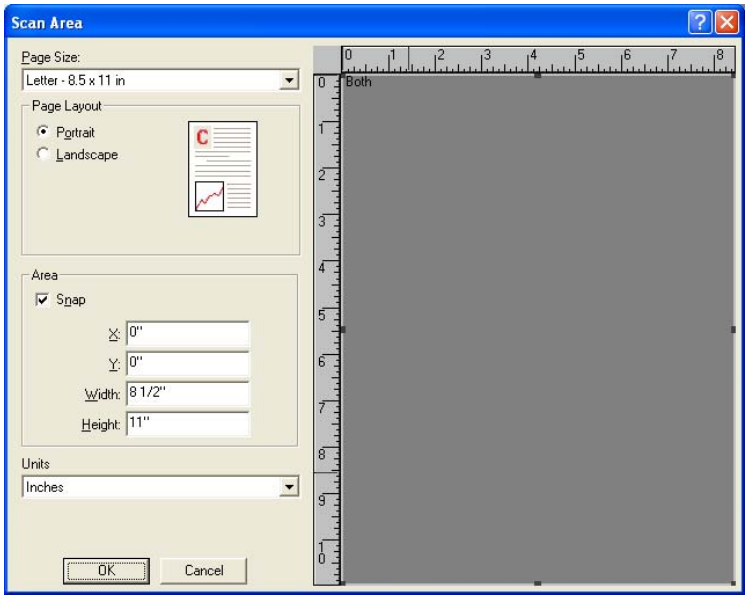
Specifies the page orientation (Portrait or Landscape).

Paper Size

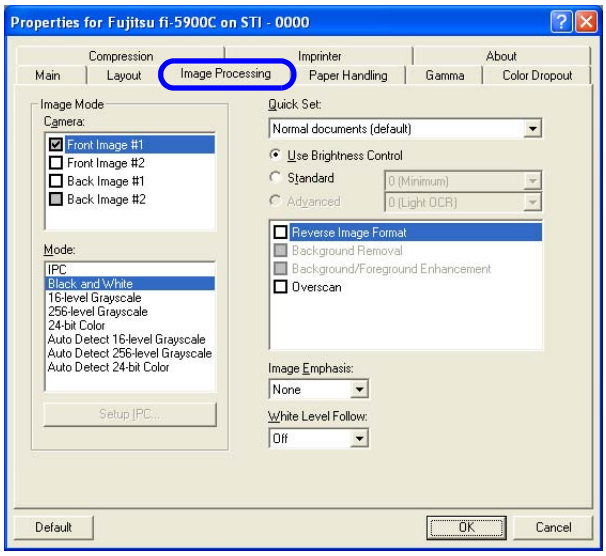
Selects a paper size according to the size of the document to be scanned. Select any size from the list.

[Scan Area...] button

Opens the [Scan Area] dialog box.
You can specify the area to be scanned.



[Image Processing] tab



Quick Set:

You can select a preset pattern for image enhancement. By selecting the one from the list, you can quickly set the details of the image enhancement processing. Available patterns are as follows:

Normal documents (default)	This item is suitable for scanning the documents like the ones used in offices.
Advanced DTC	This option scans any kind of documents by binary processing to produce data with good scanning quality. Documents containing thin letters, characters with the colored background, and colored charts cannot be scanned sufficiently clearly by ordinary binary processing. By using this option, however, you can achieve good scanning quality.
Background/Foreground Enhancement	This option makes image contours soft by disabling the Outline Extraction, and the whole image blurs.
NCR forms with background removed	This option removes background of scanned images and smooths outline, giving an effect of anti-aliasing on the images.
Cleanup noisy documents	This option removes noise on the data.
Magazines, Brochures, etc.	This option is suitable for scanning documents which have texts and photos (e.g. magazines, brochures).

Reverse Image Format

Converts colors from/to negative to/from positive.

Overscan

Scans the document allowing more margins than the ones of paper size specified at [Paper Size:]. Thus, the result of scanning is bigger than the specified paper size.

Image Emphasis

This option processes the outline of the scanned image as follows:

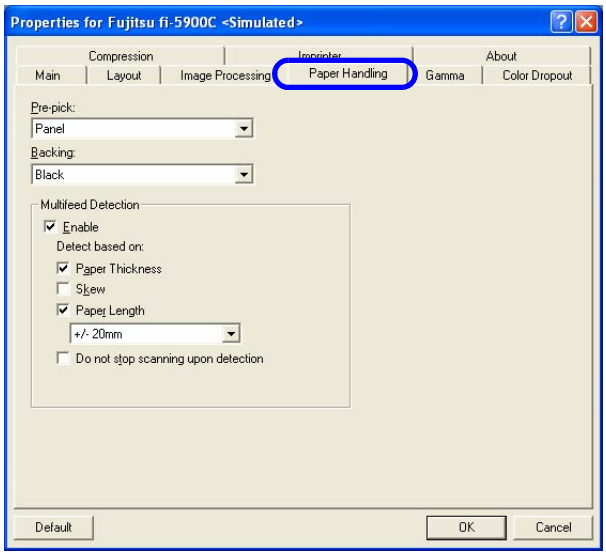
Low, Mid, High	Emphasizes the contour of images. You can select the degree of emphasis from low, mid, and high.
Smooth	Smooths jaggy images.

White Level Follow

Use this option when the basic color of documents is not white; for example, when scanning newspaper.

Auto	Automatically switches between “On” and “Off”; when the “Mode” is “Black and White”, this option is “On”, and when the “Mode” is “Color/Gray scale”, it is “Off”.
On	Scans the document, adjusting the white balance of its background. (Line drawing mode)
Off	Scans the document with a predetermined value for the white balance.(Photograph mode)

[Paper Handling] tab



Pre-pick

With this option, you can enable or disable Pre-picking. Pre-picking is an operation that feeds documents into the ADF (to the scanning position) before starting actual scanning operation. Select “On” to shorten the required time for scanning.

Backing

With this option you can set the background color (Black/White).

Multi-feed Detection

Multi-feed is an error that occurs when two or more sheets are fed simultaneously. You can set conditions so that the scanner will stop its operation and display an error message when Multi-feed is detected.
Multi-feed can be detected based on the “Paper Thickness” or “Paper Length”.

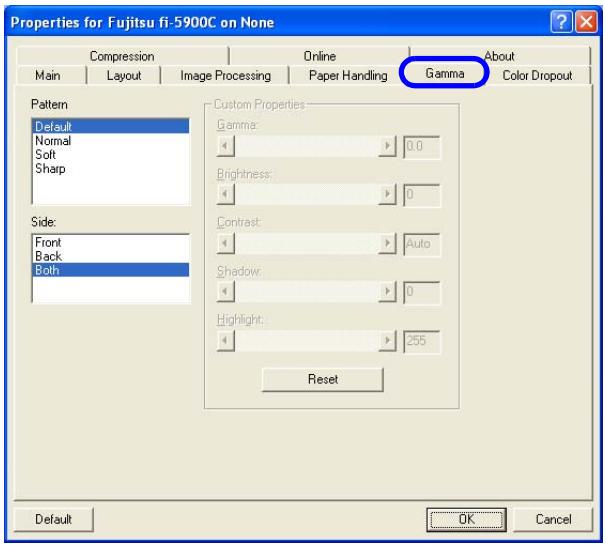
Skew

With this option, you can set the scanner so that it will stop its operation and display error messages when any skewed document is detected.

Do not stop scanning upon detection

With this option, you can set the scanner so that it continues scanning even if any Multi-feed or skew is detected.

[Gamma] tab



Pattern

Specifies how to correct Gamma. Available correction patterns are: “Normal”, “Soft”, “Sharp”. “Custom” is selectable when “Color” is selected on the Main tab.

Side:

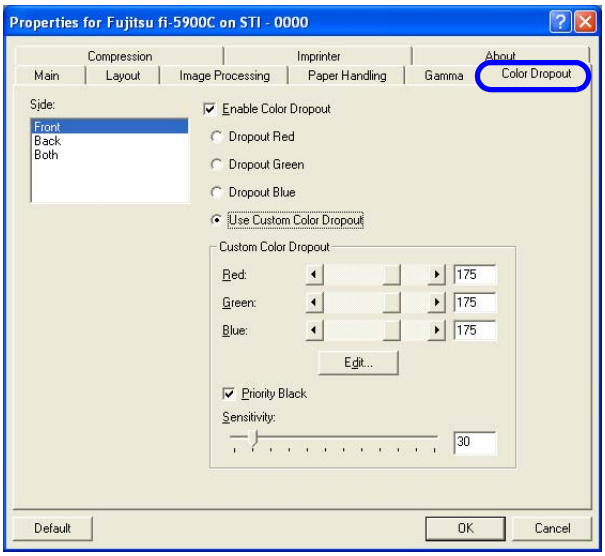
Specifies side(s) to which you want to apply the settings made on this window.

Custom Properties

Can be specified when “Cutom” is selected in the “Pattern” list.
You can specify the numeric values of items such as “Gamma”, “Brightness”, “Contrast”, “Shadow” and “Highlight”.

[Color Dropout] tab

Red, Green, Blue (Light's three primary colors) or any color can be selected to drop out from the documents to be scanned. For example, if you specify "Red" when scanning black letters with red outlines, only the black part of the letters are scanned.
You can use this function when black and white or gray scale is selected.



Enable Color Dropout

Color Dropout is enabled.

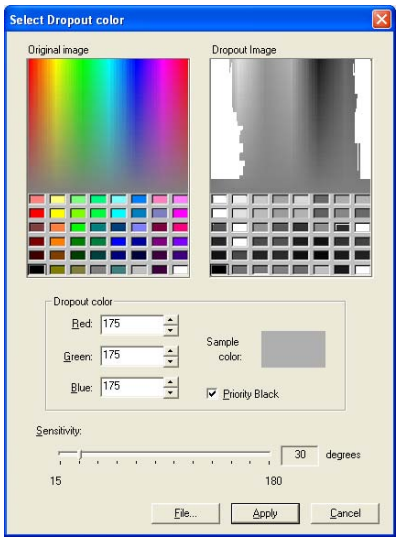
Dropout Red	An image in which red color dropout has occurred is output.
Dropout Green	An image in which green color dropout has occurred is output.
Dropout Blue	An image in which blue color dropout has occurred is output.
Custom Color Dropout	An image in which a selected color dropout has occurred is output.

Custom Color Dropout

Any color to drop out can be specified when "Use Custom Color Dropout" is selected.

[Edit...] button

Clicking this button displays the “Select Dropout Color” window and you can specify any color to drop out as checking Dropout Image.



Original Image

The sample color is shown. By clicking colors in Original Image, you can select the color to drop out from the image.

Dropout Image

The image after color dropout is shown.

Dropout Color

Both the numeric values and the sample color of the specified color to drop out are shown.

You can change the numeric values by directly inputting them or using ▲/▼ .

Priority Black

Mark this checkbox when you want no color dropout for scanning letters.
Marking this checkbox avoids dropout of colors with low saturation such as black, which is often used for letters.

Sensitivity

You can specify the degree of color dropout.
The range of sensitivity: 5 - 180 degree (30 degree by default)
The larger the degree, the broader the range of colors to drop out.

[File...] button

You can select an image file (*.bmp format) to display it in “Original Image”.

[Apply] button

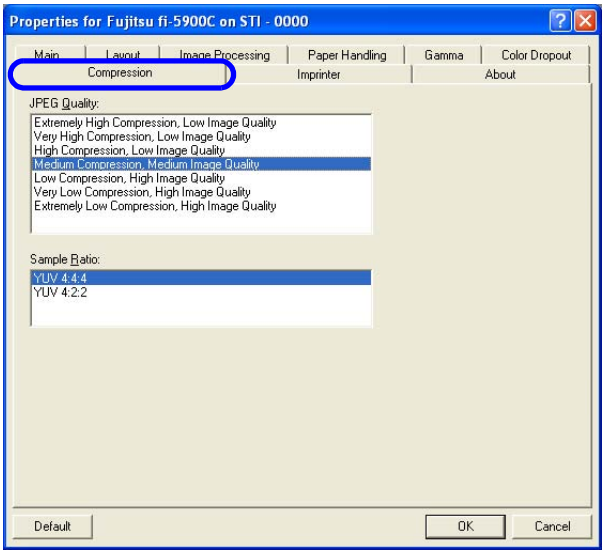
Changes made are applied and the “Select Dropout color” window is closed.

[Cancel] button

Changes are voided and the “Select Dropout color” window is closed.

[Compression] tab

You can configure compression settings for scanning images in color or gray scale on this tab.



JPEG Quality:

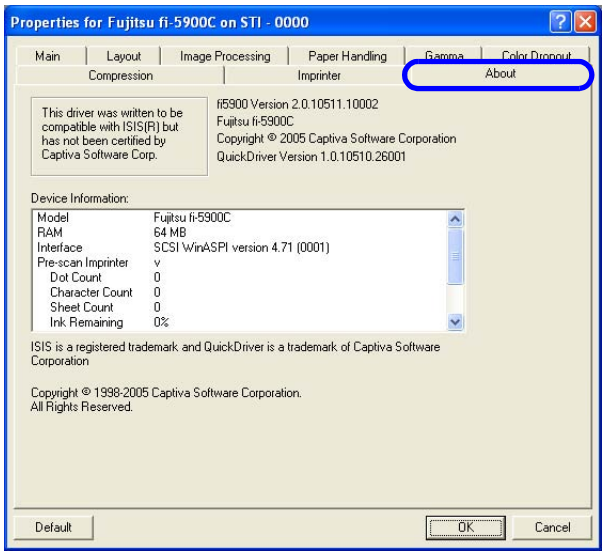
Specify the compression level and image quality.

Sample Ratio:

Specify the sample ratio by which images are compressed. The file size of images compressed by the ratio of YUV4:2:2 is smaller than that of images compressed by the ratio of YUV4:4:4.

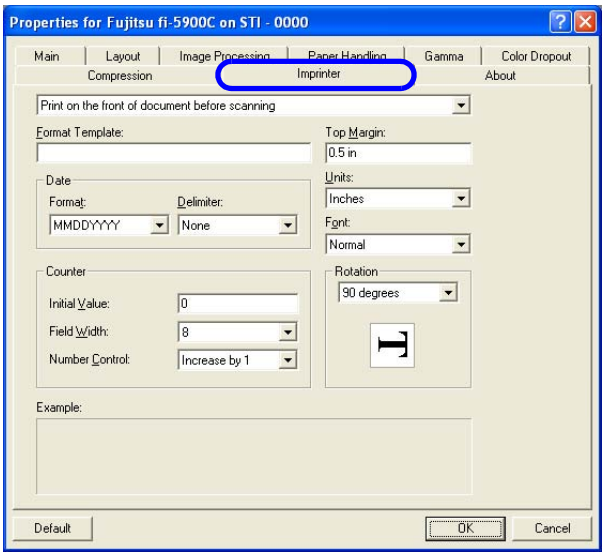
[About] tab

You can check the version number of the ISIS driver as well as hardware information of the scanner connected to the personal computer.



[Imprinter...] tab

You can make settings for Pre-/Post-Imprinter Options (to be purchased separately).
Unless Imprinter Option is installed, this tab will be unshown.



Do not print	Imprinter is not used.
Print before scanning	With Pre-Imprinter, printing is done on the front face of the document.
Print after scanning	With Post-Imprinter, printing is done on the rear face of the document.

Format Template:

Letters typed in this text box are printed on the document.
You can use the following characters.

Alphabet	A to Z, a to z
Numeric	0, 1 to 9
Symbol	! " $ # % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ' { | } ~
Year/Month/Day	%Y
Time	%T
Counter	% (You can select 5-digit or 8-digit. The counter must be preceded by a string of characters.
Other	One byte space

Up to 40 characters can be typed in. (When you select 8-digit for the counter, the maximum number of characters is 43.)

Date

Specifies how to display the date.

Format:	You can specify how to display the date.
Delimiter:	You can select delimiters (grouping separators).

Counter

Specifies the rule of display.

Initial Value:	You can specify the initial vale.
Field Width:	You can specify the number of digits for the counter.
Number Control:	You can specify the number by which the counter is incriminated/decremented.

Top Margin:

Specifies the location where the printed string of characters starts.

Setting range:	0.5 to 10.5 in.(1.27 to 26.7cm)
Minimum unit:	0.1 in.(0.01cm)

Units:

Selects a unit for Top Margin values i(nch, cm, or pixel).

Font:

Selects the font to use for printing (Normal, Bold, or Narrow).

Rotation:

Specifies the orientation of strings of characters.

2.14 Before Using [Scan] / [Send to] button

By setting the link of the application software to the [Scan] button and [Send to] button, you can launch the linked application by simply pushing the button.

■ For Windows 98, Windows Me, Windows 2000 and Windows XP:

1. **Select [Control panel] from the [Start] menu.**
2. **Select [Property] from [Scanner and Cameras].**

HINT

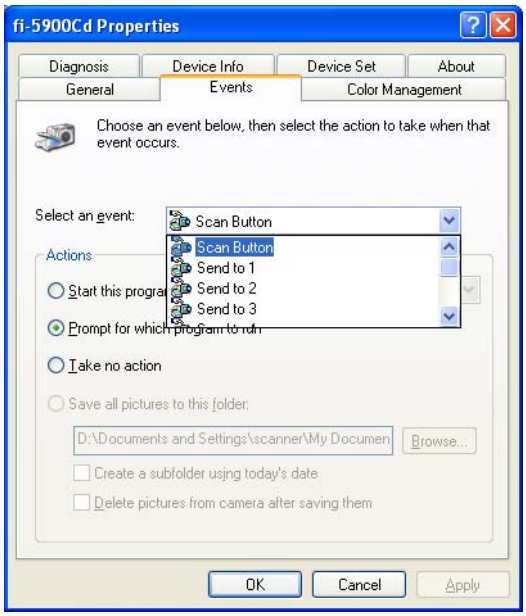
For Windows XP, when the control panel is displayed in “Category” mode, select [Printer and other hardware] and then click [Scanner and camera].

3. **Display the “fi-5900C” properties.**

   For Windows ME and Windows XP, right-click the “fi-5900Cd” icon.
   For Windows 98 and Windows 2000, double-click the “fi-5900Cd” icon.

4. **Select the [Event] tab.**
5. **Select the event to launch the application.**

   For Windows XP, select event to be performed by the application from the [Select event] menu.



With this function, the next events can be selected.

Scan button (When clicking on [Scan] button)
Send to 1~9(When clicking the [Send to] button)

6. Select the application executed by the event.

For Windows XP, select [Performing selected program] under [Performing] and then select the application to be processed.

7. Click OK.

■ For Windows 95 and Windows NT 4.0:

1. Click the “FUJITSU Scanner Control Center” icon and right-click to open [Option].

2. Select the [Common] tab.

3. Select the application to be started by the event.

Event:	Selects the event to launch the application. - Start/Scan button (When pushing the [Scan] button) - Send to 1-9 (When pushing the [Send to] to button)
Path:	Specifies a file name of the application to be started with its absolute pathname. A file can be also selected directly by using the […] button.
Argument:	Specifies an argument to be passed when starting the specified application. (This item can be omitted.)
Start in:	Specifies a default folder for starting the application. A default folder can be also selected by using the […] button. (This parameter can be omitted.)
Run:	Specifies the display size of the application to be started.

The argument that can be specified differs by application. Refer to the manual of the application for details.
If an argument is not specified, the application starts up but scanning does not. To start scanning after starting up, it is necessary to specify an argument.
For ScandAll 21, the following arguments are available.
(you can combine and use these arguments. In this case, you have to leave a space (“◁”) between arguments.
The arguments are in no particular order.)
/ScanToView:
Displays scanned image on screen.
/ScanToFile:
Saves scanned image to file.
/Exit:
Exits the application after scanning.
/PROGRES:0
Hides the FUJITSU TWAIN32 progressive indicator window.
/SHOWUI:X
Displays or hides the FUJITSU TWAIN32 setting window.
X=0: To hide, X=1: To display, X=2: To follow the setting done in ScandAll 21.
/SCANDEF:XX
Specifies the setting file of FUJITSU TWAIN32 (XX=00~99).
/NOSCNERR
Hides the FUJITSU TWAIN32 error messages.
/NOAPPERR
Hides the ScandAll 21 error messages.
/AppendToView
Adds the currently scanned image to the previous one to view.

/NOOPDLG
Specifies not to show the following dialogbox that can be set from Scan-Option File setting dialog.

- FTP server setting dialog
- Print setting dialog
- Microsoft SharePoint Portal Server setting dialog
- Mail setting dialog

4. Click [OK].

2.15 Resuming from Power Saving Mode

Power saving mode saves the power consumption of the scanner while the power is turned on. When the scanner is left without operation for 15 minutes or more (factory initial setting), it automatically enters the power saving mode.

When the scanner entered the power saving state, the LCD indication of Operation panel becomes off and the green LED lamps for Power button and Paper Thickness keeps lighting.

If you want to resume the scanner from the power saving mode, take any of these actions below.

- Set documents on the hopper.
- Press any button on the Operator panel (except the Power button*).
  * If you press the power button for two seconds or longer, the power is turned off.
- Execute any command from the scanner driver screen in the PC.

The waiting time for entering the power saving mode can be set in a range from 5 to 60 minutes in steps of 5 minutes. To set the power saving mode, refer to “8.2 Power saving setting” on page 172.

3 SCANNING VARIOUS TYPES OF DOCUMENTS

This chapter describes how to scan various types of documents.

This chapter explains operations using the screens of Windows XP. Depending on your OS, your PC's screen shots and the operation may be different from this manual. Be aware that when the FUJITSU TWAIN32 scanner driver or the FUJITSU ISIS scanner driver is updated, the screens and operations noted in this chapter may change. In that case, refer to the User's Guide provided with the update.

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3.1 Double Sided Scanning

When you want both sides of a document to be scanned at the same time, set the feeding option to “Duplex”.

Below is the procedure with TWAIN driver.

1. **Set the document on the hopper.**

   Refer to section “2.6 Loading Documents on the Hopper” on page 17.

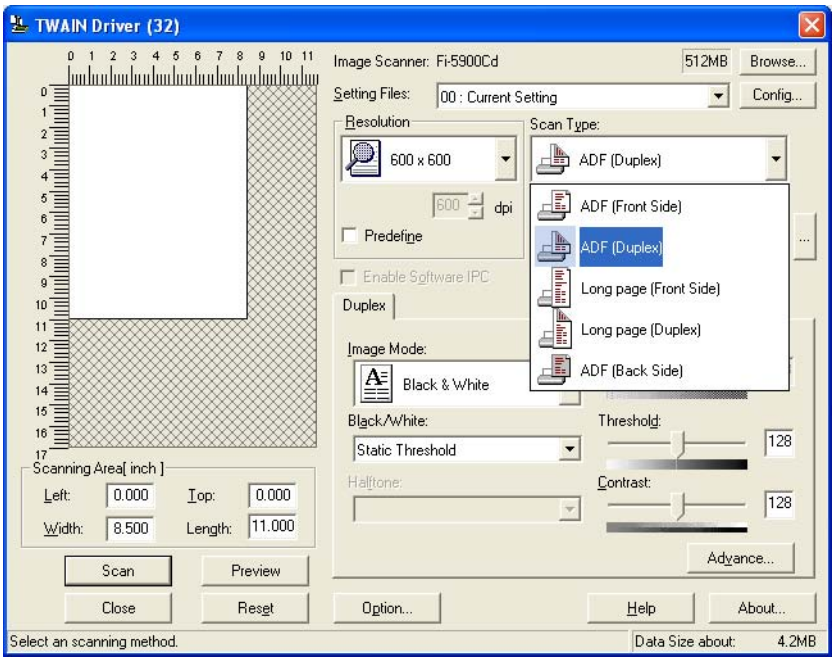
2. **Adjust stacker in accordance with document size.**

   Refer to section “2.7 Setting up the Stacker” on page 22.

3. **Start TWAIN driver with the application used.**

   Refer to section “2.13 How to use the Scanner Driver” on page 41.

4. **Set the [Scan Type:] to “ADF (Duplex)”.**



5. **Set resolution and document size and so on, and then click [Scan] button.**

3.2 Scanning Documents Longer than A3

When scanning documents longer than A3, set the feeding option to “Long Page”.
This scanner can scan documents up to 863mm long.

Below is the procedure with TWAIN driver.

1. Set the document on the hopper.

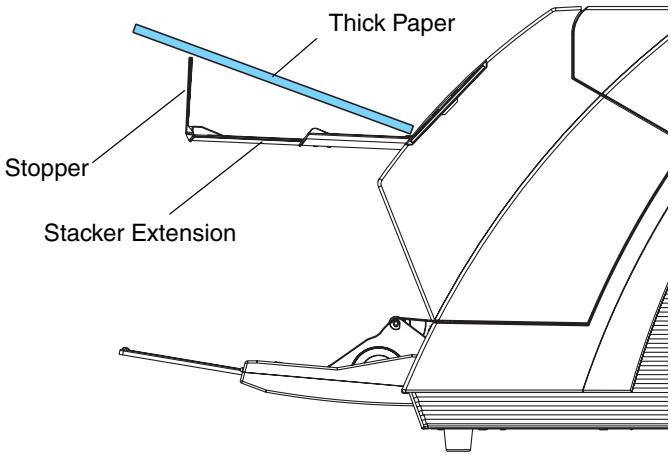
Refer to section “2.6 Loading Documents on the Hopper” on page 17.

2. Adjust stacker in accordance with document size.

Refer to section “2.7 Setting up the Stacker” on page 22.

HINT

When scanning long pages (longer than A3), the document may be longer than the stacker extension even if it’s pulled to the outermost position. In case like this, place a thick paper about the size of A4 on the stopper and make a slope as depicted below.



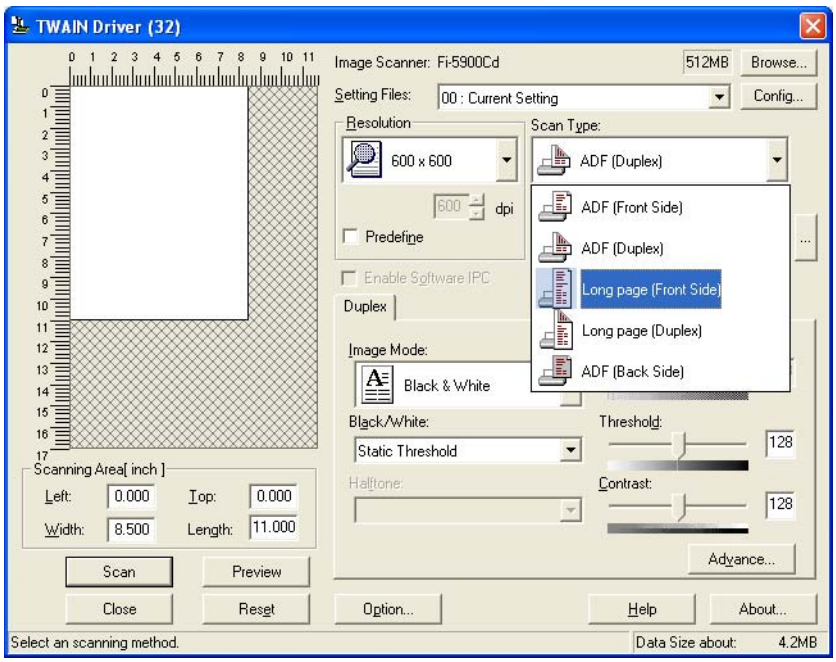
(The scanner can scan documents up to 863mm long.)

3. Start TWAIN driver with the application used.

Refer to section “2.13 How to use the Scanner Driver” on page 41.

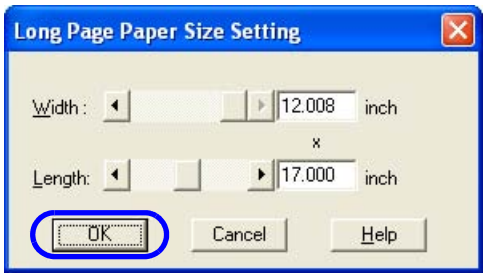
4. Set [Scan Type:] to “Long Page (Front Side)” or “Long Page (Duplex)”.

Choose “Long Page (Front Side)” when scanning one side; “Long Page (Duplex)”, both sides.



⇒The “Set the document size” screen will appear.

5. Click [OK] after setting the document



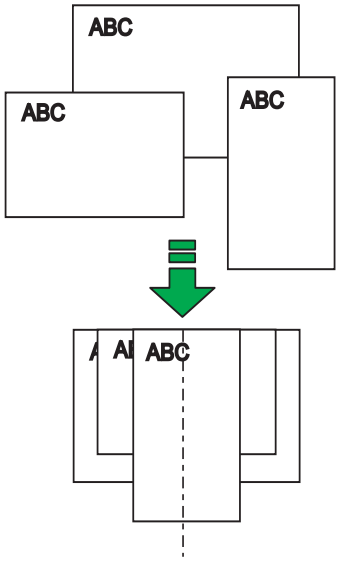
6. Set resolution and document size and so on, and then click [Scan] button.

3.3 Scanning Documents with different widths

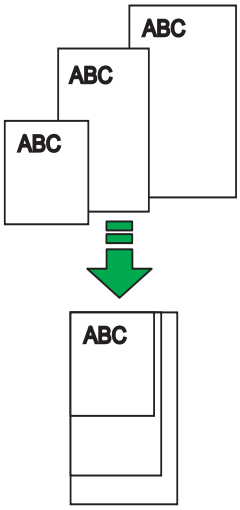
When you scan a batch of documents with different widths, follow the instruction below.

1. Align the leading edge of the documents.

Aligning the document alongside their center line

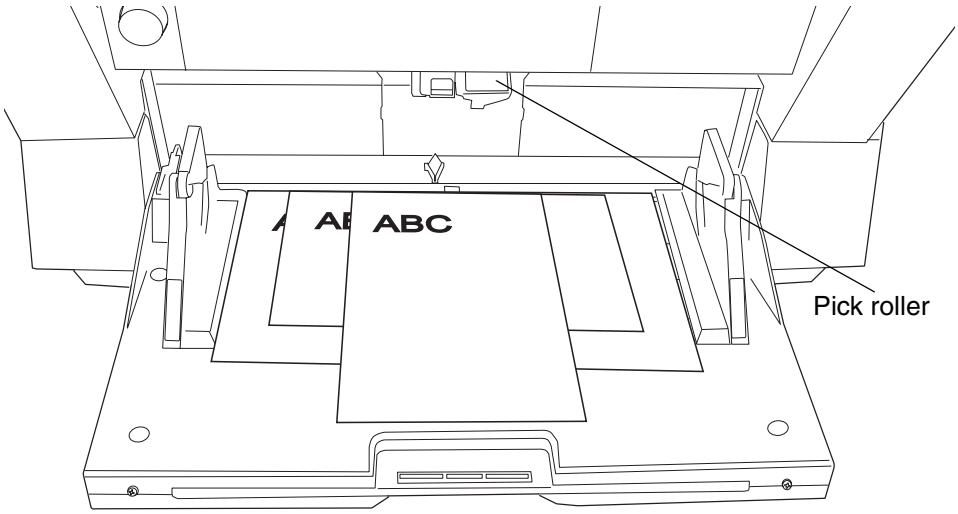


Aligning the document with its left (or right) edge



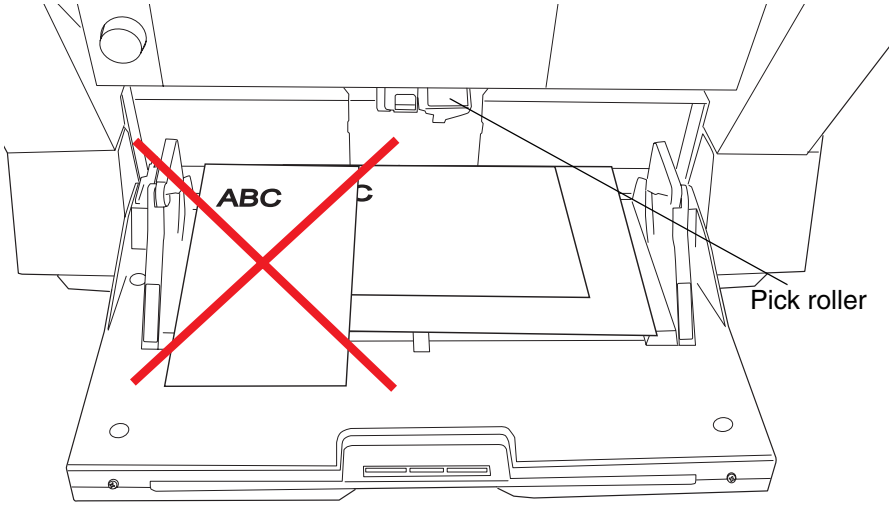
This section describes the procedure to align the document alongside their center line. For the procedure to align the document with its left (or right) edge, refer to " (2)Setting the document by either Side Guide of the hopper." on page 19.

2. Load the documents on the center of the hopper.

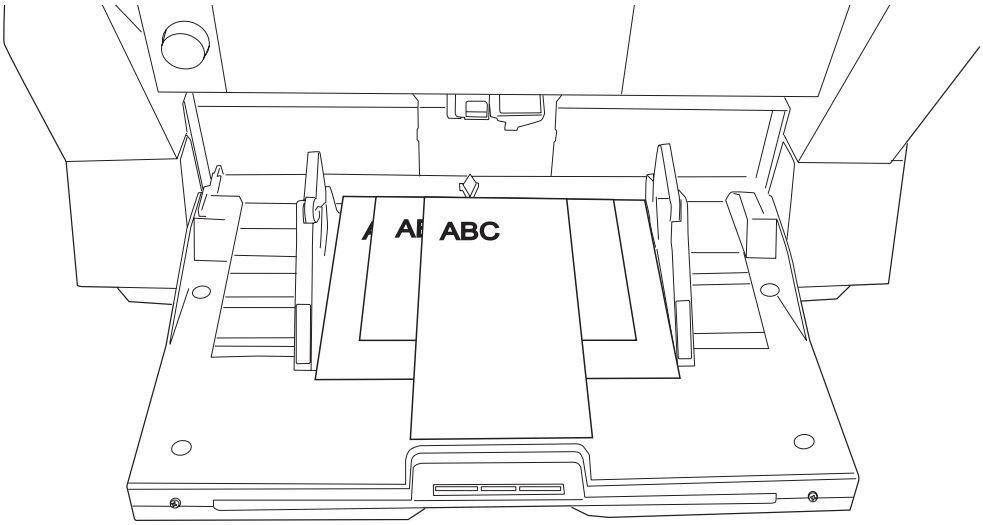


ATTENTION

Load the documents so that each sheet can be reached by the pick roller. (If the documents are not placed below the Pick roller, the document feeding will not be possible.)



3. Align the side guides to the width of the widest document.



4. Align the stacker's position.

Refer to "2.7 Setting up the Stacker" on page 22 for details.

5. Start up the scanner driver.

Refer to “2.13 How to use the Scanner Driver” on page 41 for further information about how to start up the scanner driver.

6. Perform the settings for the scanning on the scanner driver’s configuration window.

For the TWAIN driver

Paper size: (Main display)
Set the width of the widest, and the length of the longest document.

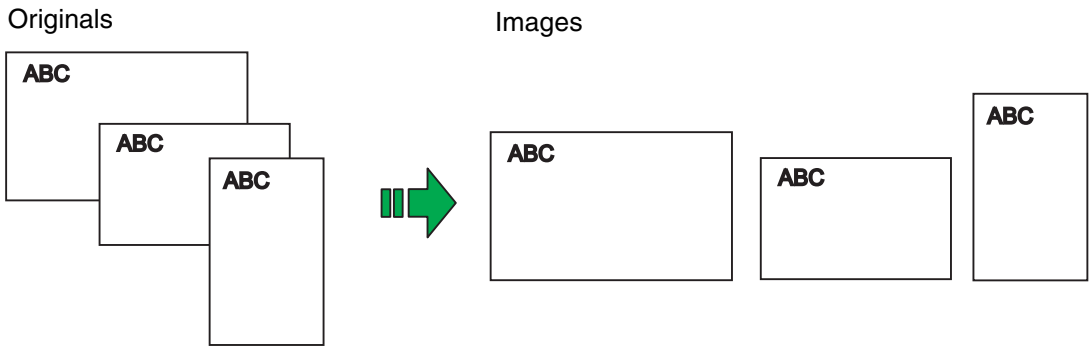
Automatic size and skew detection: ([Option] Screen→[Rotation] tab)
Select automatic paper size detection.

For the ISIS driver

Cropping: (on the [Main] tab)
Select [Automatic].

7. Scan

⇒The images of each document will be generated according to their size and displayed on the screen.



ATTENTION

- When scanning mixed size document, because the hopper side guides will not function, the scanned images are easily skewed.
  We recommend you to enable “Automatic Page Size Detection”.
- Multifeed Detection by length cannot be used together with “Automatic Page Size Detection”.
- Refer to "7.8 Scanning Mixed Documents" on page 162 for details on scannable mixed size documents.

3.4 Saving Scanned Images in PDF Format

To save scanned images in PDF format, Adobe Acrobat must be installed on your PC.
Adobe Acrobat can be installed from the provided Adobe Acrobat CD-ROM.

There are two ways to save scanned images in PDF format.

(1) Using ScandAll 21(page 77)

This method is recommended when the image is scanned in color or grayscale mode.
The benefits are:

Reduced PDF file size

Easy creation with no special operations

(2) Using Adobe Acrobat (page 79)

This method is recommended for faster creation of PDF files and for black and white scanning.
The benefits are:

Quick Creation of PDF file with original scan resolution unchanged

The file size can be adjusted by changing the PDF compression rate

Notes for using Adobe Acrobat

- Acrobat's default settings overrides the previous settings for “Resolution”, “Scan Type” and “Image Mode”.
- The following functions cannot be used:
  - “256 Color” or “8 Color”
  - “Rotation Degree” selection when “End of Page Detection” is selected
  - Long Page Scanning
- When scanning a paper document and converting the image to PDF using Acrobat, unexpected images may be output when:
  1. Setting “Edge Shadow Removal” in Acrobat, and setting “Digital Endorser” or “Black Background” options in the TWAIN driver at the same time. Letter strings embedded in the image or the background may be missed.
     Solution 1: Set “Edge shadow removal” to “OFF” or set any option other than “Adaptive” for “Color/Grayscale” and/or “Monochrome” under “Compression” by selecting [File] - [Create PDF] - [From Scanner…] - [Image Settings…] in Acrobat.
     Solution 2: Adjust the scanning density in the TWAIN driver.
  2. Setting “Adaptive” for “Color/Grayscale” and/or “Monochrome” under “Compression” in Acrobat and scanning in a resolution lower than the resolution recommended for Acrobat.
     Solution: Set OPTION to something other than “Adaptive” under “Compression.”
  3. Scanning a document longer than the double letter (11x17) or A3 size, when setting “Overscan” in the TWAIN driver, the scan may fail.
     Solution: When scanning a double letter (11x17) or A3 size of document, do not set “Overscan” in TWAIN driver.

As for detailed usage and information of Acrobat, refer to “Create a PDF file from a scanned document” in Acrobat Help.

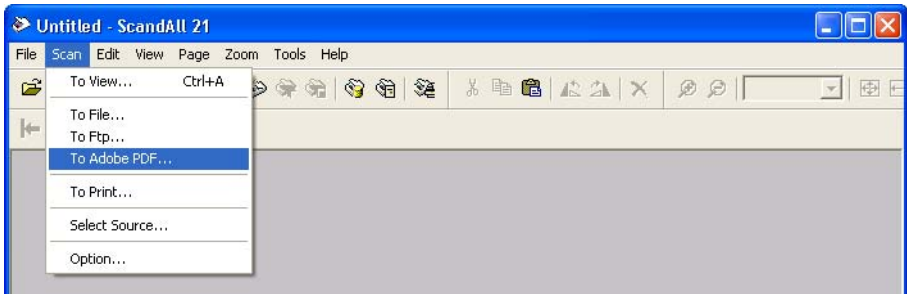
■ Using ScandAll 21

1. Load the documents on the hopper.

2. Start up ScandAll 21.

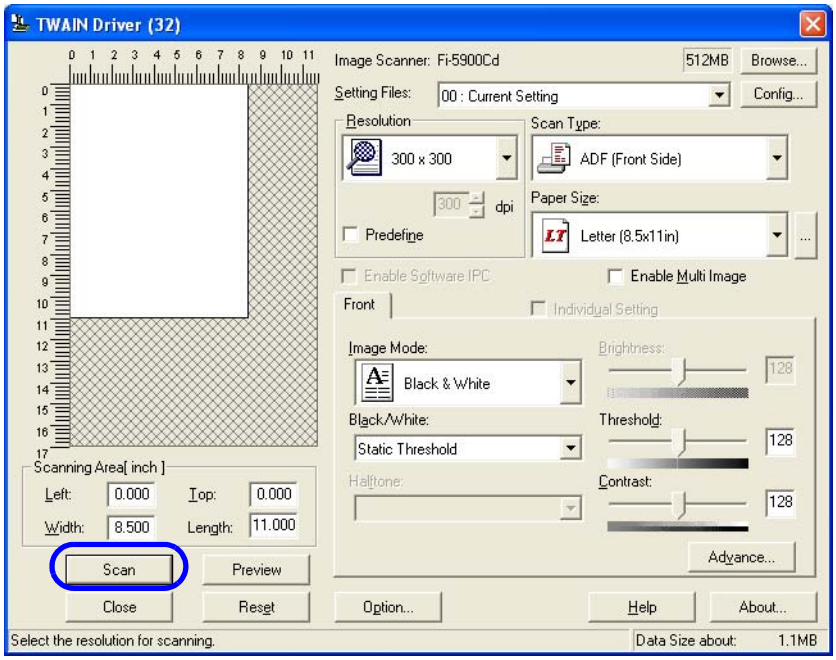
Select [Program]-[Scanner Utility for Microsoft Windows]-[ScandAll21] from the [Start] menu.

3. From the [Scan] menu select [To Adobe PDF...].



⇒The [TWAIN Driver] dialog box appears.

4. Set the scan resolution, paper size etc., and then click the [Scan] button.

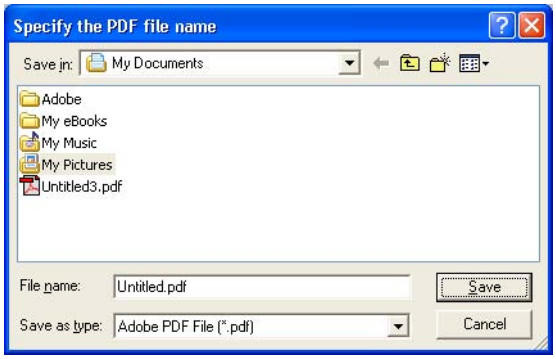


5. When scanning is done, click the [Close] button.

The “Save as” window will appear.

6. Enter the file name and select the destination to save the scanned image.

For details, refer to the descriptions in the [Help] menu of ScandAll 21.



■ Using Adobe Acrobat

Following shows the procedure for saving scanned images in PDF format.

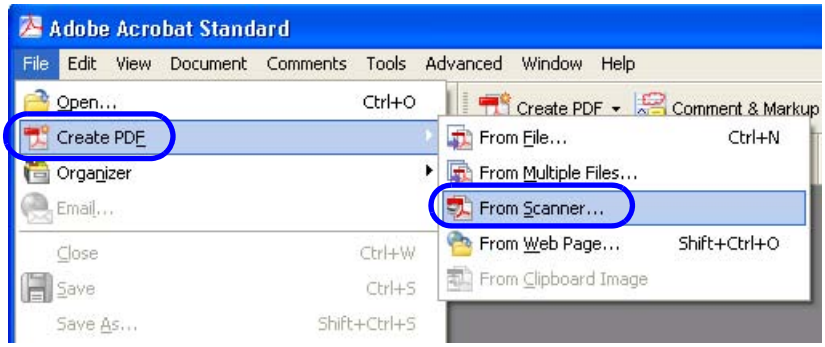
1. Load the documents on the hopper.

2. Start up Adobe Acrobat.

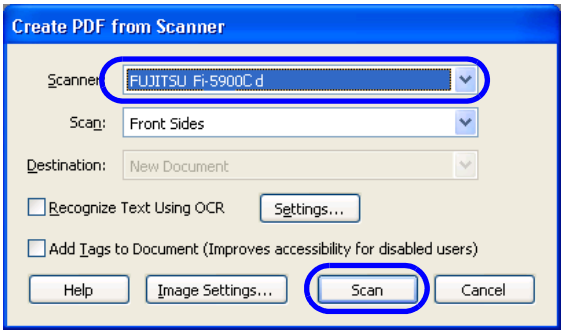
Select [Programs] - [Adobe Acrobat] from the [Start] menu. This starts up Adobe Acrobat.

3. From the [File] menu, select [Create PDF] - [From Scanner].

[Create PDF from Scanner] dialog box is displayed.



4. Select "FUJITSU Fi-5900Cd" at [Scanner] and click [Scan] button.



⇒The [TWAIN driver] dialog box is displayed.

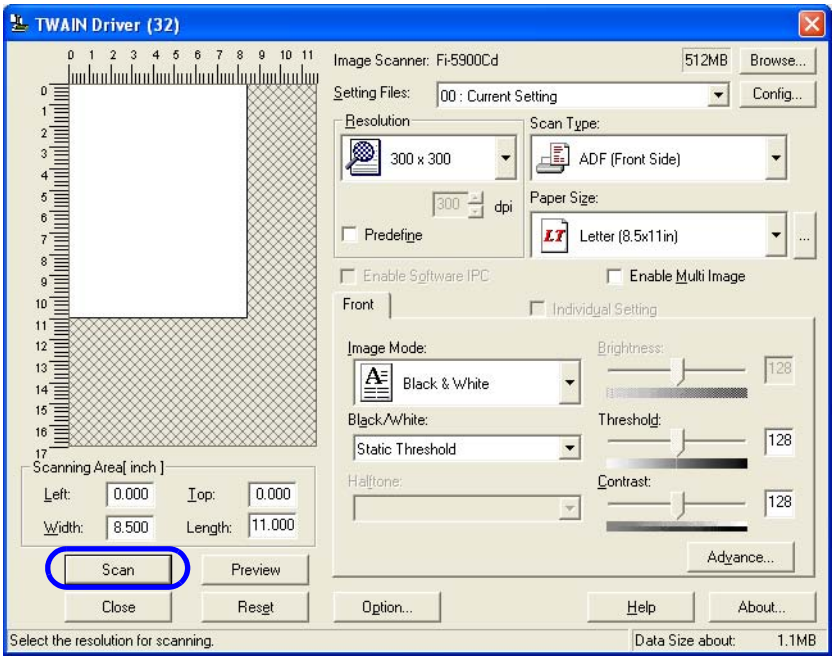
ATTENTION

Scanning with default settings may yield unexpected results. If that is the case, change the settings as follows:

- Uncheck "Recognize Text Using OCR"
- Click "Image Settings" and change the following:

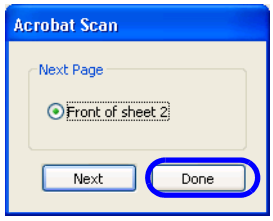
  Color/Grayscale :None
  Monochrome :JBIG2 or CCITT Group 4
  Background Removal :Off
  Halo Removal :Off

5. Select the scan resolution, document size etc., and click the [Scan] button.

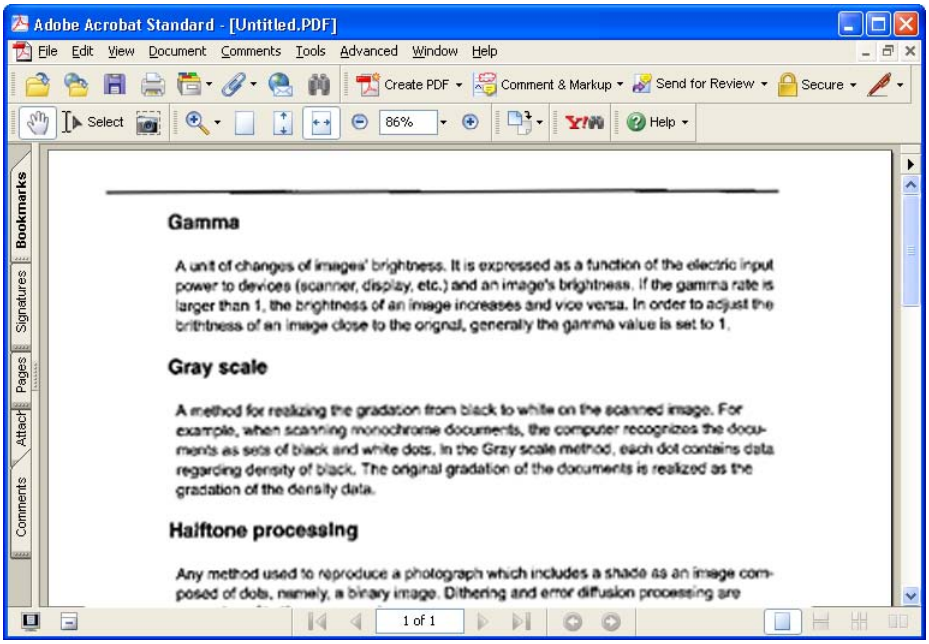


⇒The scanning will be performed.

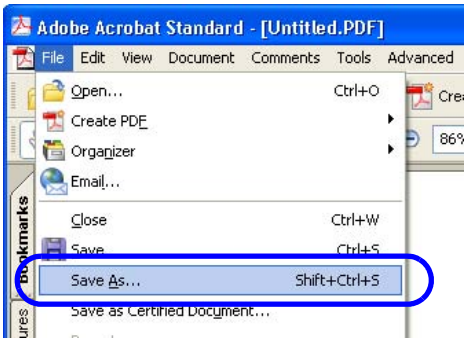
6. When scanning is finished, click the [Done] button.



⇒The scanned image is displayed.


Adobe Acrobat Standard - [Untitled.PDF]
File Edit View Document Comments Tools Advanced Window Help
Create PDF
Comment & Markup
Send for Review
Secure
Select
86%
Help
Bookmarks
Signatures
Pages
Attach
Comments
Gamma
A unit of changes of images' brightness. It is expressed as a function of the electric input power to devices (scanner, display, etc.) and an image's brightness. If the gamma rate is larger than 1, the brightness of an image increases and vice versa. In order to adjust the brightness of an image close to the original, generally the gamma value is set to 1.
Gray scale
A method for realizing the gradation from black to white on the scanned image. For example, when scanning monochrome documents, the computer recognizes the documents as sets of black and white dots. In the Gray scale method, each dot contains data regarding density of black. The original gradation of the documents is realized as the gradation of the density data.
Halftone processing
Any method used to reproduce a photograph which includes a shade as an image composed of dots, namely, a binary image. Dithering and error diffusion processing are
1 of 1

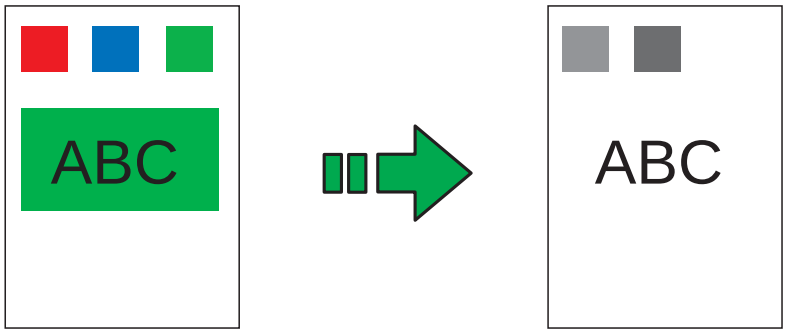
7. Select [Save as...] or [Save] from [File] menu to save the scanned image.



For the details on Adobe Acrobat operations, refer to the Adobe Acrobat manual and Help.

3.5 Excluding a Color from the image (drop out color)

One of the primary colors: red, green ,blue or any other color can be removed (dropped out) from the scanned image data. For example, if the document contains black text in a green frame, you can set the scanner to read only the text and eliminate (drop out) the green frame.(Dropout color will only work when scanning in monochrome or grayscale mode).



Example: the result of “dropping out” green.

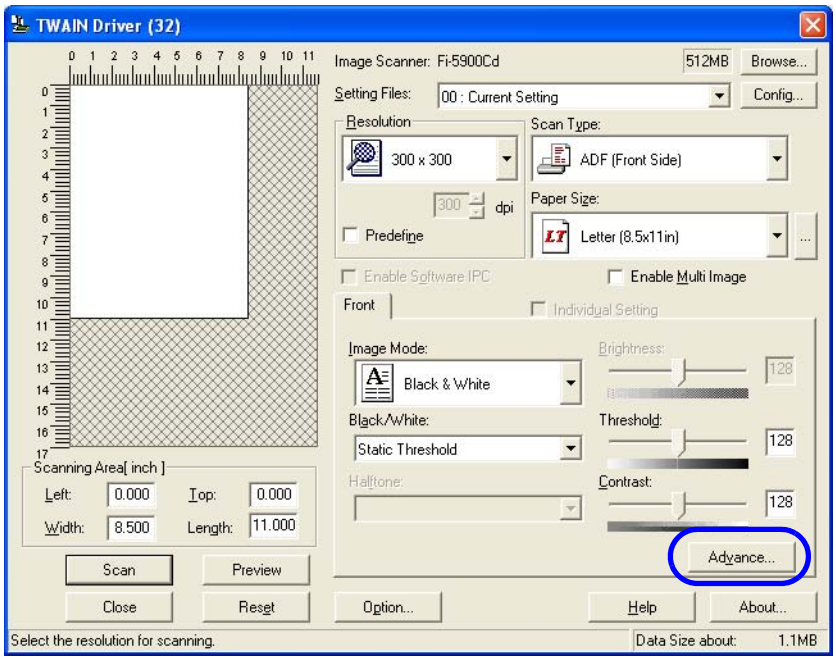
To set the scanner to drop out a color, change the settings in the [TWAIN Driver] dialog box before scanning.

The following shows the procedure for changing the settings in this dialog box.

1. **Start TWAIN Driver from your scanning application.**

   Refer to “2.13 How to use the Scanner Driver” on page 41.

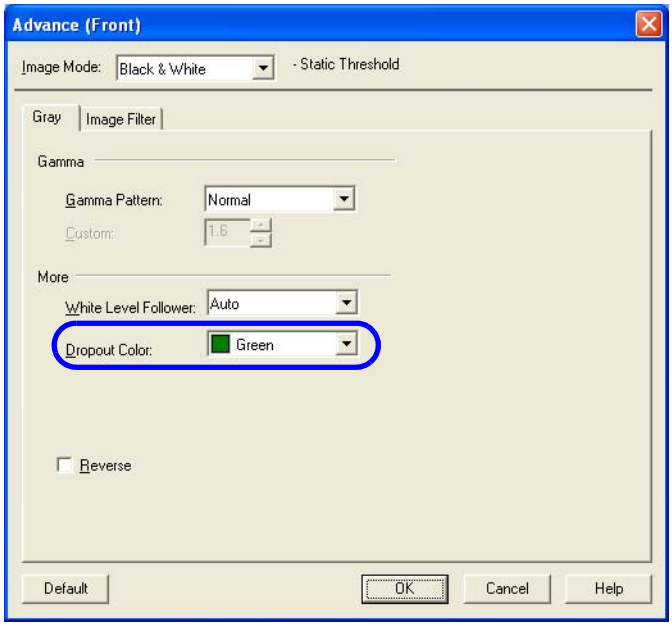
2. **Click [Advance...] button in the [TWAIN Driver] dialog box.**



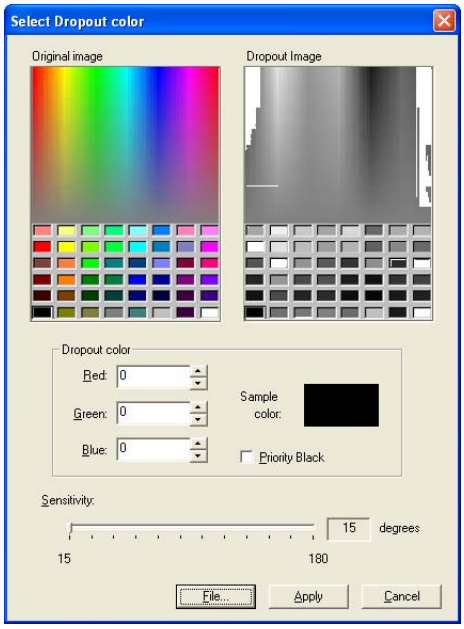
⇒The [Advance] dialog box appears.

3. Select the color to be dropped out from [Dropout Color] under [More].

For example, if the document contains black text in green frame, select [Green] so that the scanner only reads the text and eliminates the frames.
If you do not wish to have any colors dropped out, select “None”.



If you wish to drop out a customed color, please select [custom pattern 1-3].
When selecting [custom pattern 1-3], the following screen will be displayed.



Original Image

Color samples are displayed. Click on the color you wish to exclude from the image. This will set the dropout color.

Dropout Image

The image as it will be generated after the dropout is displayed.

Dropout color

The selected dropout color will be shown as numeric value and as color sample.

You can enter a numeric value directly or use the [▲]/[▼] buttons to change the dropout color.

Priority Black

If you do not wish to drop out text from the image, please mark “Priority Black”.
Colors of low saturation (like black), that are used normally for texts will not be dropped out by this function.

Sensitivity:

The sensitivity for the detection of the selected color to be dropped can be adjusted.

Setting range: 5 - 180 degree (default setting: 15 degrees)

The bigger the value for the sensitivity is set, the color range (tones) of the selected dropout color becomes wider (i. e. the tolerance for the color detection gets bigger).

[File...] button

An arbitrary image file (*.bmp format) can be displayed in [Original Image].

[Apply] button

The settings made in this screen will be applied and the window is closed.

[Cancel] button

The settings made in this screen will be aborted and the window is closed.

4. Click [OK] button.

[TWAIN Driver] dialog box will be redisplayed.
Then, scan the documents using this dialog box.

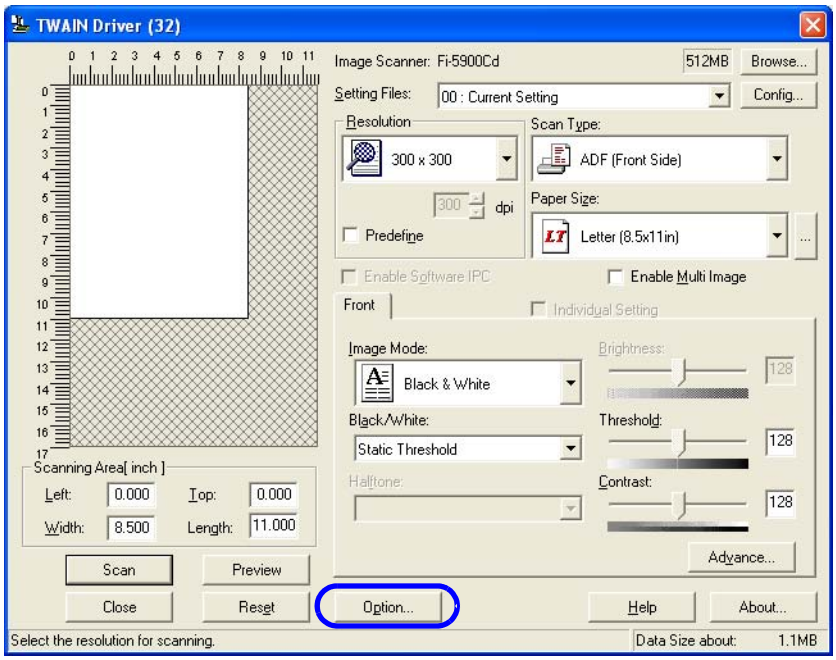
3.6 Skipping blank Pages

If enabled, the scanner will automatically detect blank pages of the documents and remove them from the scanned image. For example, when double sided and single sided pages are scanned together, the blank side of the single sided pages will be skipped during scanning. Change settings in the [TWAIN Driver] dialog box to enable skipping blank pages at scanning documents.

1. Start TWAIN Driver from your scanning application.

Refer to "2.13 How to use the Scanner Driver" on page 41.

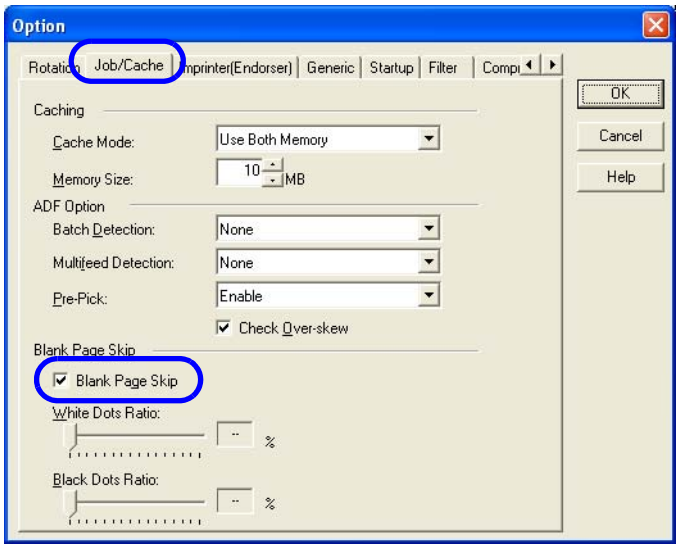
2. Click the [Option...] button in the [TWAIN Driver] dialog box.



⇒The [Option] dialog box appears.

3. Click the [Job/Cache] tab.

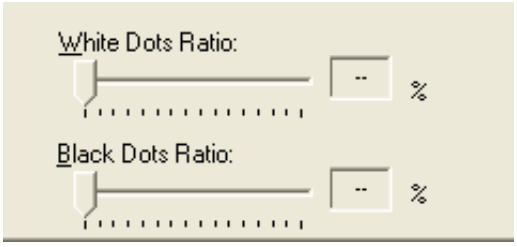
4. Check the [Blank Page Skip] box.



When the check box is marked, “Cache Mode” will change to “Ram cache” or “Use both memory”.

5. Using the slider control under [Blank Page Skip], specify the Blank Page Skip degree.

<In Binary/Halftone mode>

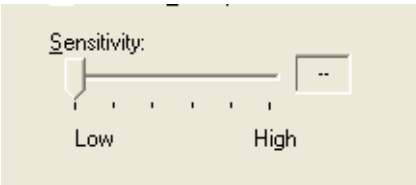


For white pages, use the [Black Dots Ratio] slider bar to set the skip condition. For black pages, use the [White Dots Ratio] scroll bar to set the skip condition.

The value displayed to the right of the scroll bar displays the noise ratio(*1). If a scanned document is below this value, it is recognized as a blank page. The range is OFF(- -) and from 0.2% to 3.0% (in increments of 0.2%).

*1: Ratio of black dots included in the scanning area. (for white pages)

<In Color/Grayscale mode>



The [TWAIN Driver] dialog box will be redisplayed. Then, perform the scanning operation on the dialog box.

Use the slider bar to set the skip condition in five stages from 1 to 5. The bigger the value, the more likely a page will be detected as blank.

6. Click [OK] when done.

The [TWAIN Driver] dialog box will return. continue from there.

3.7 Detecting Multifeeds

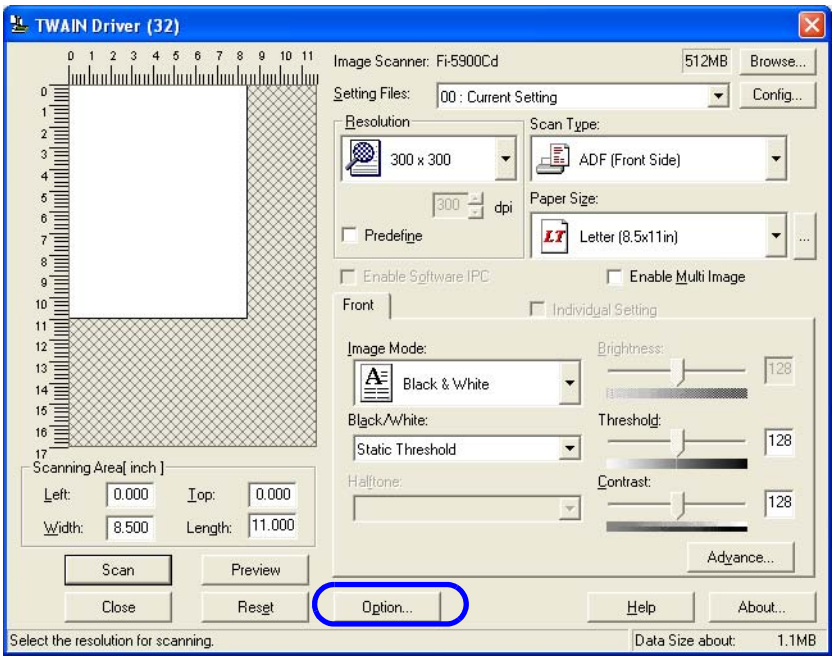
“Multifeed” is an error that occurs when two or more sheets are accidentally fed into the ADF at the same time. You can set the scanner to display an error message or ring the buzzer when the scanner detects a multifeed.
Multifeed Detection can be set either through the scanner driver dialog box or through “Software Operation Panel”. Refer to “8.4 Multifeed Detection” on page 175 for details on set up multifeed detection through “Software Operation Panel”.

The following shows the procedure for changing the settings in the [TWAIN Driver] dialog box.

1. **Start TWAIN Driver from your scanning application.**

   Refer to “2.13 How to use the Scanner Driver” on page 41

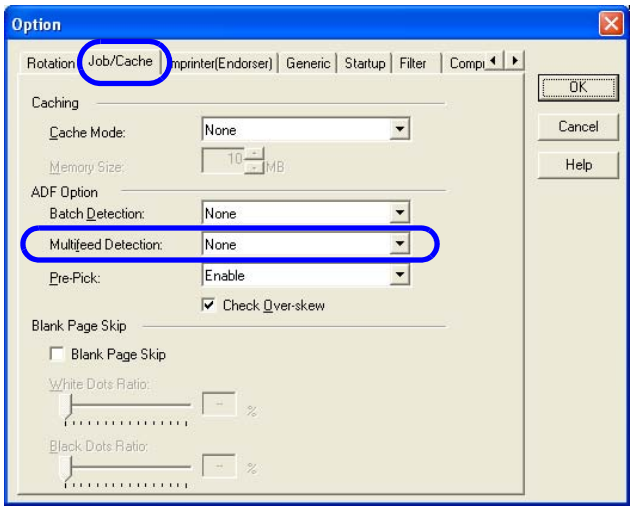
2. **Click the [Option...] button in the [TWAIN Driver] dialog box.**



   ⇒The [Option] dialog box appears.

3. **Click the [Job/Cache] tab.**

4. Select the detection conditions from [Multifeed Detection] under [ADF Option].



You can choose the following:

None	Multifeed detection is not performed.
Check overlapping	The scanner monitors for the overlapping of documents. The scanner detects a multifeed by differences in ultrasonic propagation.
Check length	The scanner monitors the length of documents. It detects a multifeed by differences in the document length when two or more document sheets are fed overlapping.
Check overlapping and length	The scanner monitors both document overlapping and length to detect multifeeds.
Hardware settings	The scanner will detect multifeeds according the settings configured on the Software Operator Panel. Refer to “8.4 Multifeed Detection” on page 175.

Furthermore, refer to "7.5 Multifeed Detection Conditions" on page 158 for detailed information about the document for multifeed detection.

5. Click the [OK] button.

The display returns to the [TWAIN Driver] dialog box. Then, perform the scanning operation on the dialog box.

⇒The scanner will stop scanning if multifeed detection is enabled in the middle of scanning operation.

6. Push the [Send To] button on the operation panel.

⇒Detected multifeeds will be ejected.

3.8 Correcting skewed Documents

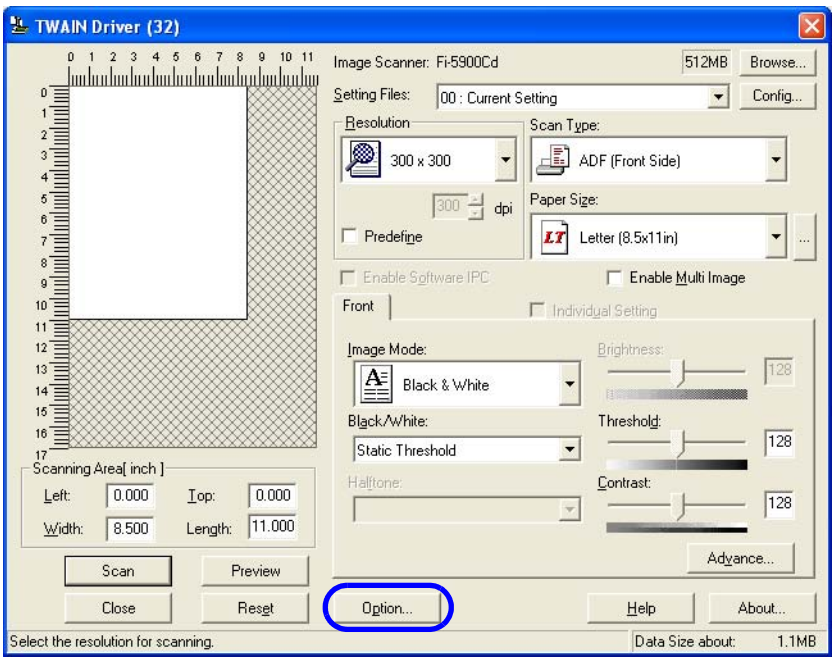
You can set the scanner to automatically detect and correct skewed documents that are fed into the ADF. The configuration is done through the scanner driver.

The following shows the procedure for changing the setting from the [TWAIN Driver] dialog box.

1. **Start TWAIN Driver from your scanning application.**

   Refer to "2.13 How to use the Scanner Driver" on page 41.

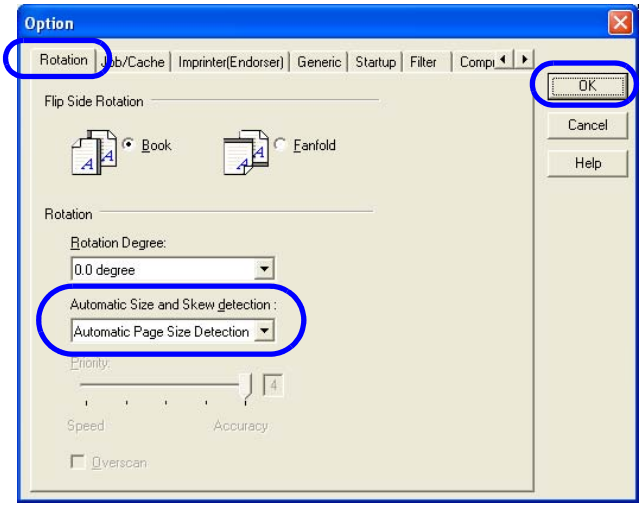
2. **Click the [Option...] button in the [TWAIN Driver] dialog box.**



⇒The dialog box appears.

3. **Click the [Rotation] tab.**

4. Select the [Automatic Page Size Detection] from the [Automatic Size and Skew Detection] menu.



5. Click the [OK] button.

The display returns to the scanning operation [TWAIN Driver] dialog box.

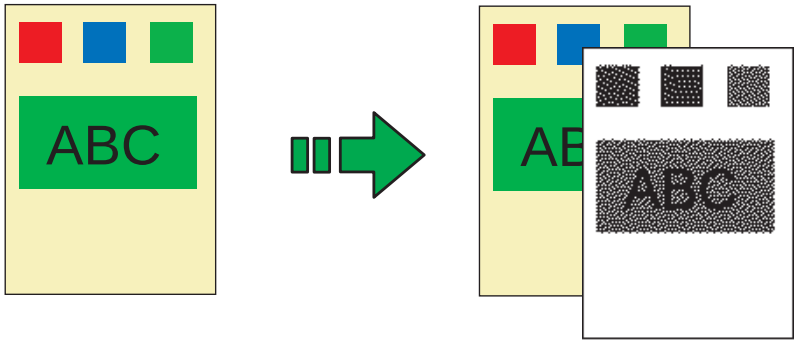
ATTENTION

When using either of the following documents, the Automatic page size detection may not function correctly.

1. Paper of weight 52g/m^2 or less.
2. Non-rectangular documents.
3. Documents with the margin filled with dark colors.

3.9 Multi Image Output

It is possible to get an output both in Color/Grey scale and binary black and white.



Original Output

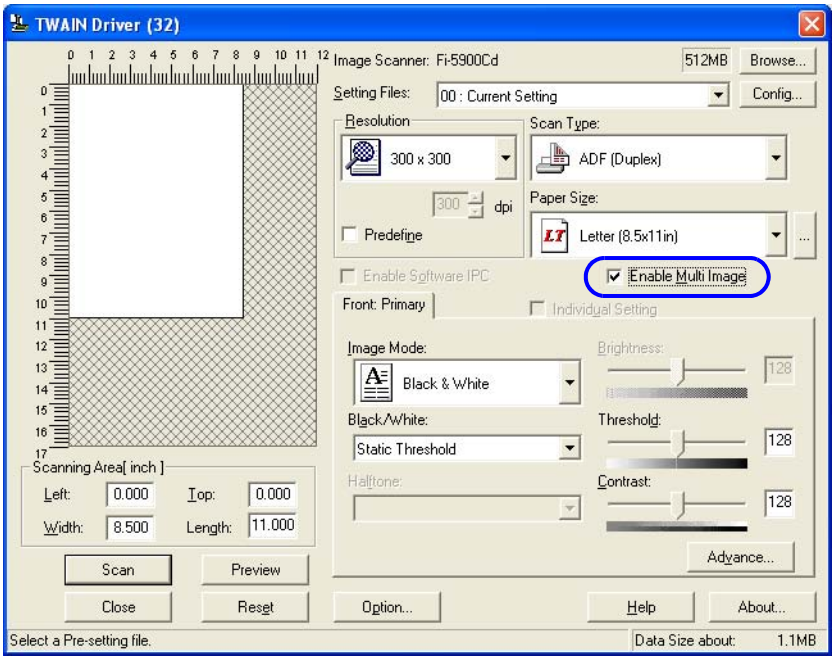
Example: Color document scanned with Multi Image.

The MultiStream setting can be done on the Scanner Driver.

The following operation uses the TWAIN driver.

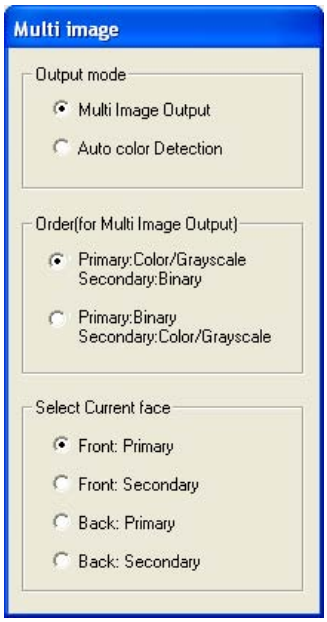
1. **Start TWAIN Driver from your scanning application.**
   Refer to "2.13 How to use the Scanner Driver" on page 41.

2. **Please check the [Enable Multi Image] checkbox in the [TWAIN Driver] window.**

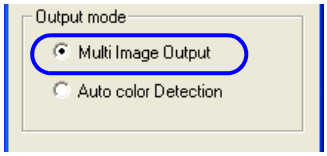


Main screen

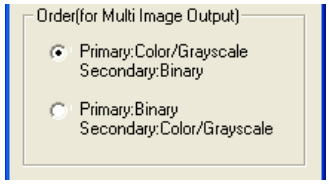
⇒ The [Multi image output] dialog box will be displayed.



3. Select [Multi image output] under "Output mode".



4. Set the order of the output in "Order (for Multi image output)".



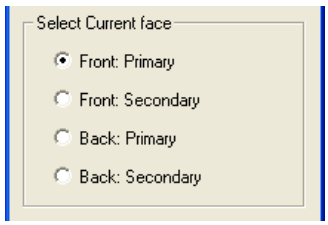
Primary: Color/Grayscale Secondary: Binary

The output order will be: [Color or Grey scale images] → [Binary monochrome images]

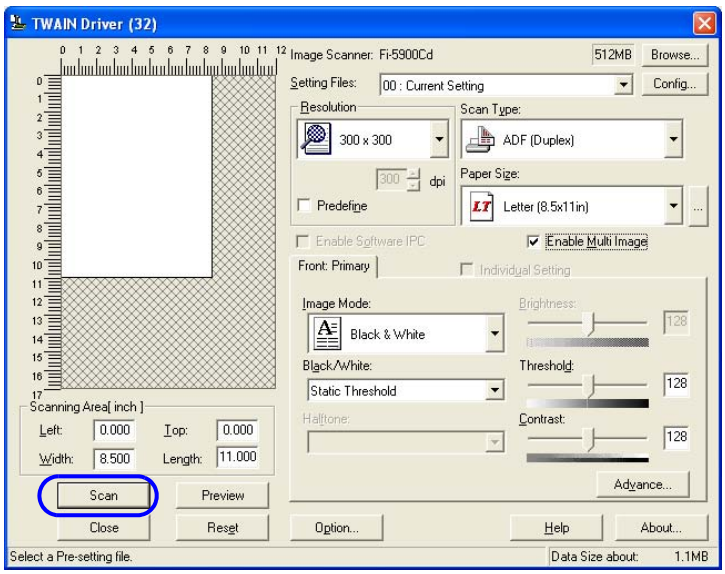
Primary: Binary Secundary: Color/Grayscale

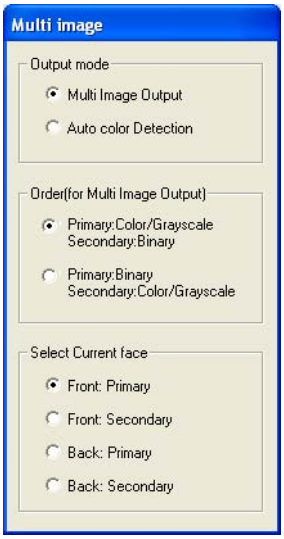
The output order will be: [Binary monochrome images] → [Color or Grey scale images]

5. Select under "Select Current face" the side of your choice and perform then for each scan settings on the main configuration screen.



6. **Click the [Scan] button to scan the document.**





3.10 Color/monochrome Auto Detection

The scanner detects whether the scanned document is color or binary monochrome. According to this detection, the images will be output in color (or grey scale) for colored documents, ide binary black and white for monochrome documents.

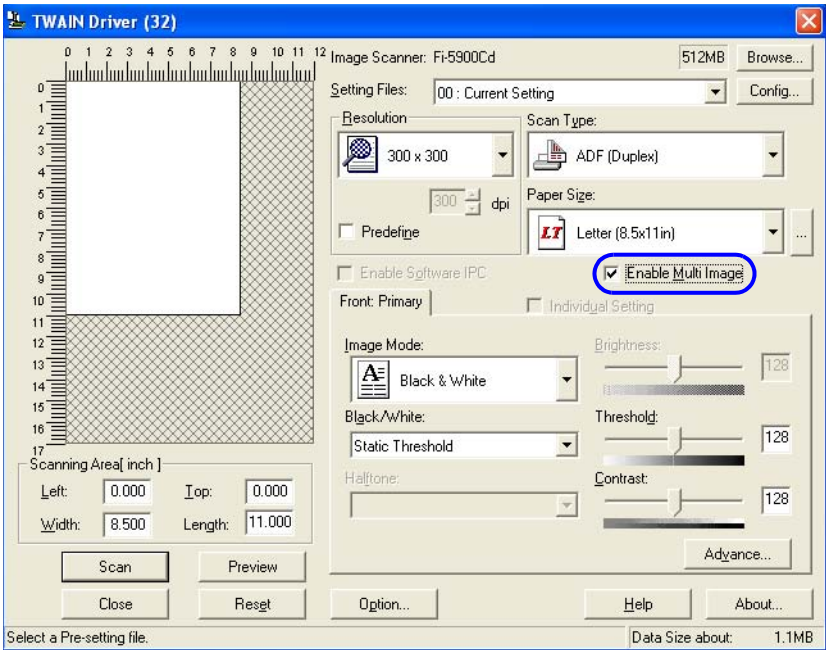
*Depending on the application, this function may not operate properly.

The settings for MultiStream can be done on the Scanner Driver.

The following operation uses the TWAIN driver.

1. **Start up TWAIN driver fromthe application you are using**
   Refer to "2.13 How to use the Scanner Driver" on page 41.

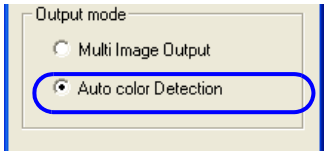
2. **Please check the [Enable Multi Image] checkbox in the [TWAIN Driver] window.**



Main screen

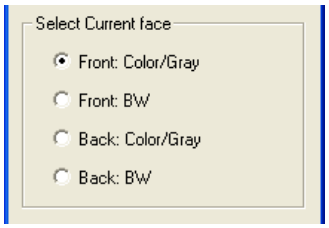
⇒ The [Multi Image output] dialog box will be displayed.

3. Under [Output Mode Selection], check [Color/Monochrome Auto Detection].

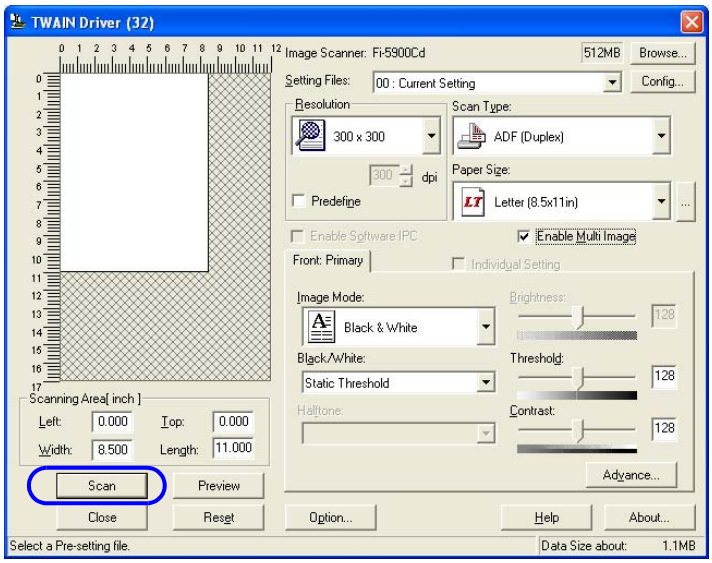


4. Select under [Current Side Selection] the side of your choice and perform then for each scan settings on the main configuration screen.

The scan settings are done in advance, for the case documents are detected as [Color/Grey scale] or [Monochroe (binary black and white)].



5. Click the [Scan] button to scan the document.



4 DAILY CARE

This chapter describes how to clean the scanner.

- Take care not to pinch your fingers inside the ADF.
- The glass inside the ADF becomes hot during operation. Be careful not to get burned.

4.1 Cleaning Materials and Areas Requiring Cleaning 100

4.2 Cleaning the Pad 102

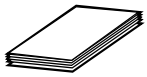
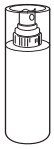
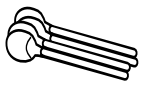
4.3 Cleaning the Rollers (using the cleaning sheet) 103

4.4 Cleaning the Rollers (with a lint-free cloth) 106

4.5 Cleaning the Transport path and the sensors 110

4.1 Cleaning Materials and Areas Requiring Cleaning

■ Cleaning materials

Cleaning materials	Part No.	Remarks
Cleaning sheet 	CA99501-0016(*1)	20 sheets/pack
Cleaner F1 (or isopropyl alcohol) 	CA99501-0013 (*1)	1 bottle, 100ml/bottle Moisten cloth with this fluid and wipe the scanner to clean.
Cleaner F2	CA-99501-0014 (*1) (*2)	1 bottle, 100ml/bottle
Cotton swab 	Commercially available	
Lint-free dry cloth	Commercially available (*3)	

*1)For the purchase of the cleaning material, contact the FUJITSU scanner dealer where you purchased the scanner.
*2)Do not clean the rubber rollers with the cleaner F2, since doing so may cause the rollers to deform or getting damaged.
*3)Any lint-free cloth can be used.

■ Locations requiring Cleaning and Cleaning Frequency

The following shows the standard cleaning frequency for each area requiring cleaning.

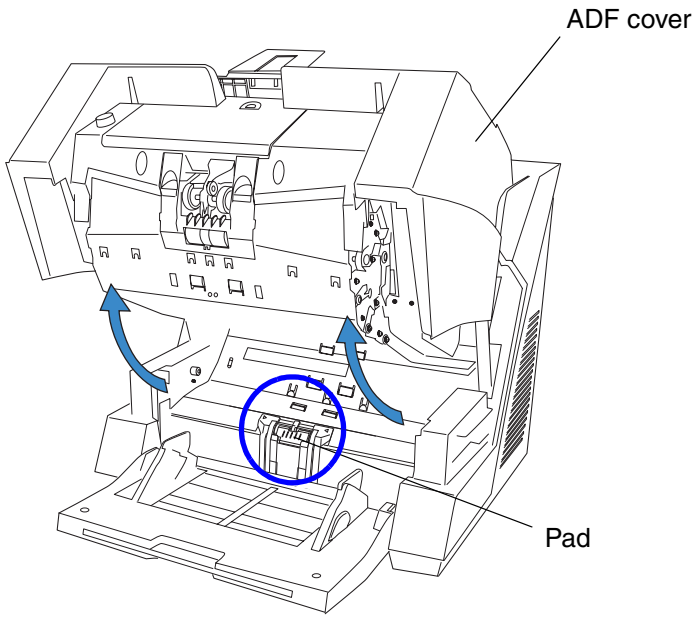
cleaning method	cleaning sheet	cloth moistened with cleaner F1	cloth moistened with cleaner F2
cleaning cycle	**every 10,000 scanned pages**	**every 10,000 scanned pages**	**clean when dirty**
Pad		✓	
Pick rollers	✓	✓	
Brake roller	✓	✓	
Separator rollers	✓	✓	
Feed roller	✓	✓	✓
Pinch roller	✓	✓	
Transport path	✓	✓	
Glass		✓	
Skew-detection sensor		✓	
Document sensors		✓	

- The scanner must be cleaned more frequently if you scan any of the following types of sheets:
  - Documents of coated paper
  - Documents that are almost completely covered with printed text or graphics
  - Paper whose back side has carbon.
  - Chemically treated documents such as carbonless paper
  - Documents containing a large amount of calcium carbonate
  - Documents filled in with pencil
- Do not use aerosol sprays to clean the scanner. The air from the spray may cause dirt and dust to enter the scanner mechanism and resulting scanner failure or malfunction.
- You must clean the following area more thoroughly when you use fi-590PRF or fi-590PRB imprinters. The imprinter ink tends to stick to the document transport path.
  - Removable sheet guide
  - Glass sheet guide
  - Feed rollers
  - Pinch rollers

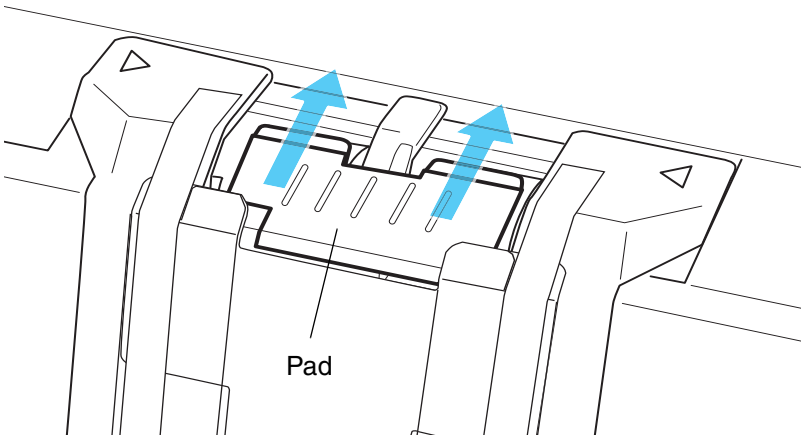
4.2 Cleaning the Pad

1. **Open the ADF cover.**

   For details, refer to "2.3 Opening and Closing ADF" on page 12.



2. **Wipe the Pad (the parts of rubber) with a lint-free cloth, moistened with cleaner F1 (or isopropyl alcohol), in the direction indicated by the arrows.**

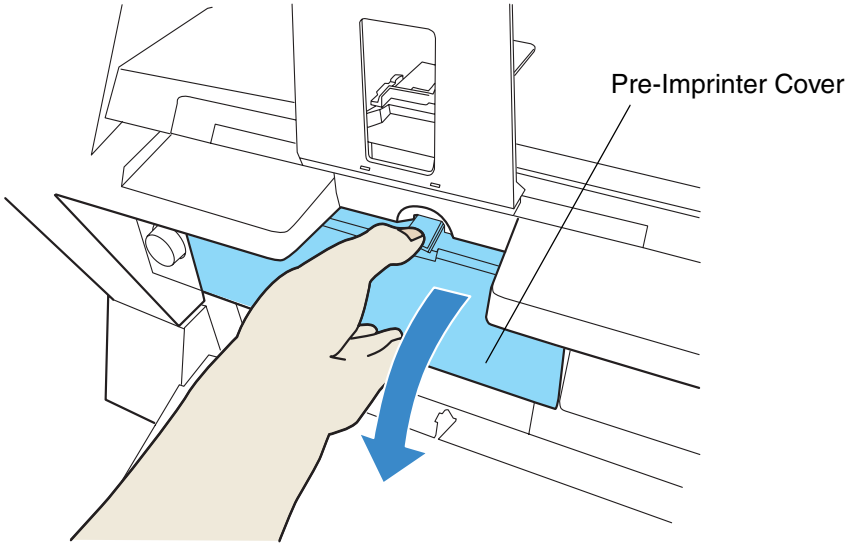


3. **Close the ADF.**

4.3 Cleaning the Rollers (using the cleaning sheet)

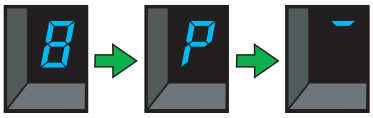
Use the cleaning sheet to clean the upper and lower ADF transport path and the rollers.

1. **Open the Pre-Imprinter Cover.**



2. **While pressing the [Scan] button , press the power button to switch on the scanner.**

   ⇒The function number display will change as shown below.



3. **Stop pressing the [Scan] button .**

   ⇒The scanner will be started up in the test mode.

4. **Close the Pre-Imprinter Cover.**

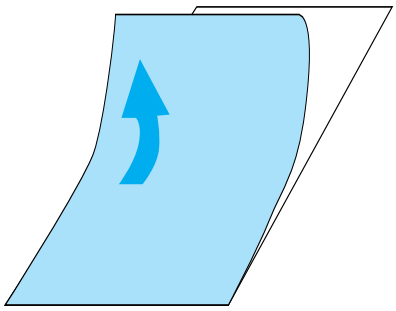
5. **Set the side guide of the hopper to B4 width.**

   For details, refer to "2.6 Loading Documents on the Hopper" on page 17.

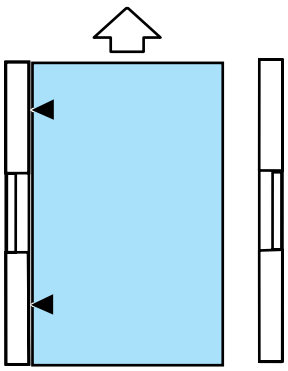
6. **Pull out the stacker extension and adjust it to the length of the cleaning sheet.**

   For details, refer to "2.7 Setting up the Stacker" on page 22.

7. **Remove the protective paper from the cleaning sheet.**

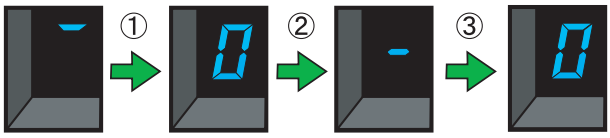


8. **Place the same cleaning sheet with the adhesive side facing up on the hopper table, aligning its left side with the side guide, as shown in the illustration below.**

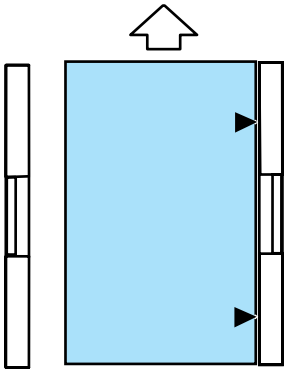


9. **Press the [Scan] button** **3 times.**

⇒The function number display will change as shown below and the cleaning sheet will be fed and ejected into the stacker.



10. **Place the same cleaning sheet with the adhesive side facing up on the hopper table, aligning the right side with the side guide, as shown in the illustration below.**



11. **Press the [Scan] button** **3 times.**

⇒The cleaning sheet will be fed and ejected into the stacker.

12. **Remove the protective paper from a new cleaning sheet and place it with the adhesive side facing down on the hopper table, aligning its left side with the side guide.**

13. **Press the [Scan] button** **3 times.**

⇒The cleaning sheet will be fed and ejected into the stacker.

14. **Place the same cleaning sheet with its adhesive side facing down on the hopper table, aligning its right side with the side guide.**

15. **[Press the [Scan] button** **3 times.**

⇒The cleaning sheet will be fed and ejected into the stacker.

16. **Press the power button** **to turn off the scanner.**

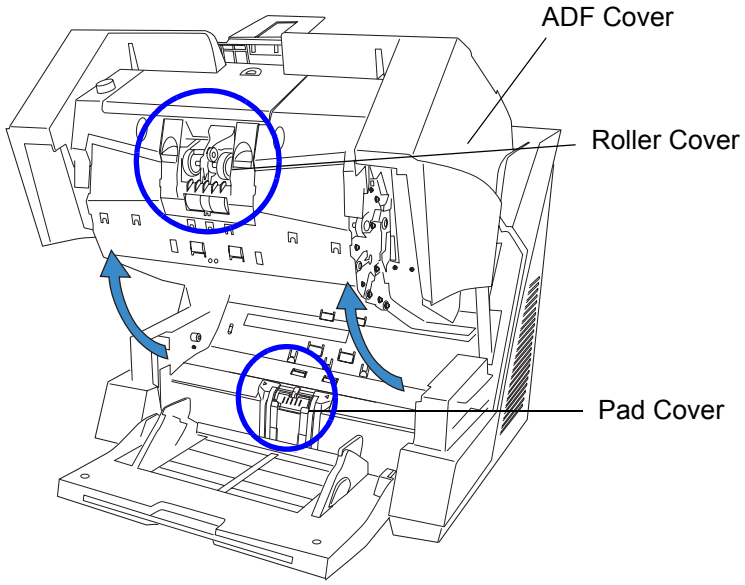
4.4 Cleaning the Rollers (with a lint-free cloth)

1. **Move the Hopper down to the "low" position if it is set in an upper level.**

   For details, refer to “2.5 Setting the Hopper Height” on page 15.

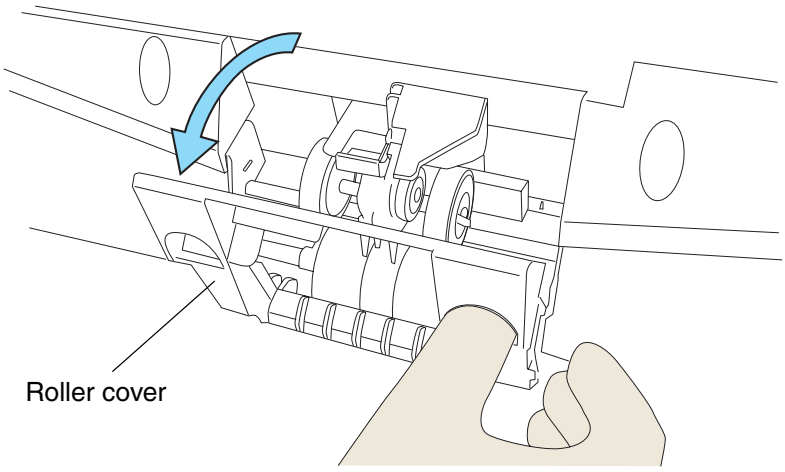
2. **Open the ADF cover.**

   For details, refer to “2.3 Opening and Closing ADF” on page 12

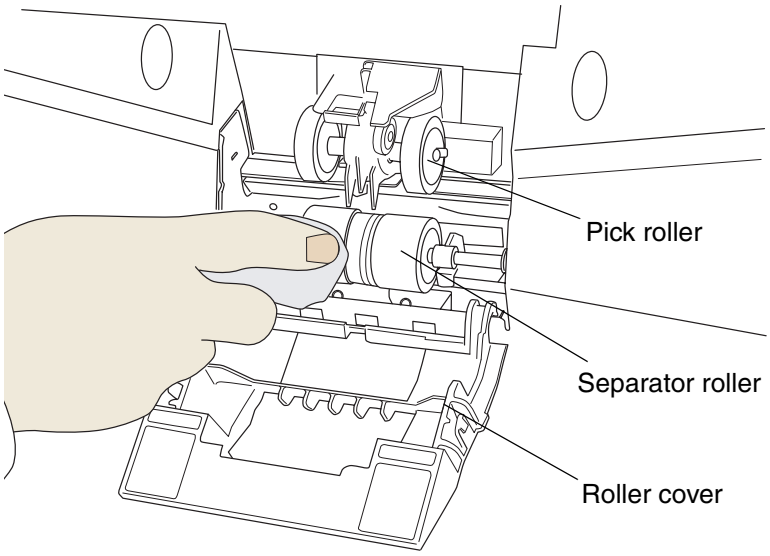


3. **Open the roller cover.**

   Grab the depression on the left and right side with your fingers and pull towards you to open the cover.



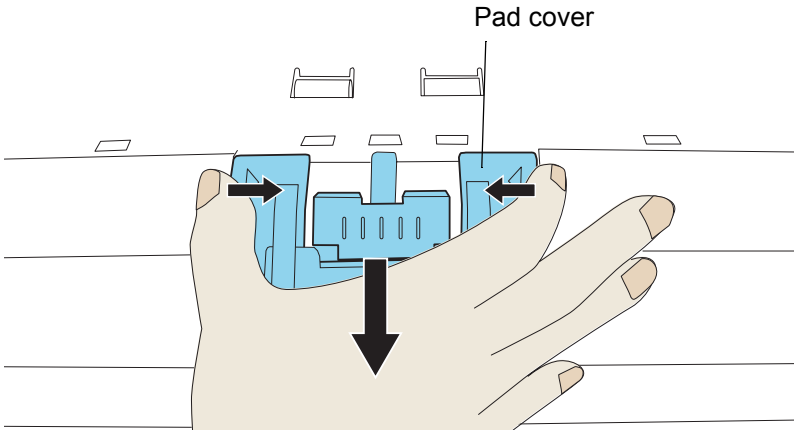
4. **Clean the Pick roller and the rubber surface of the Separator rollers using the cleaner F1 or isopropyl alcohol.**



5. **Close the roller cover after the cleaning is finished.**

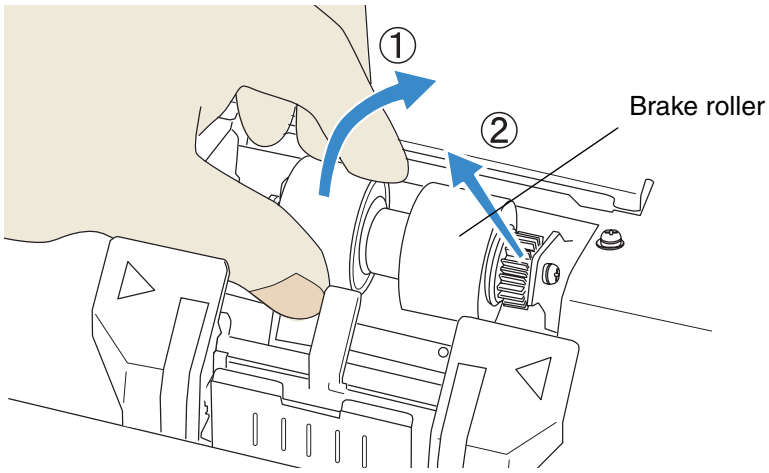
6. **Open the Pad cover.**

Grab both sides of the cover, press to the inside and pull down (towards you), as shown in the illustration below.

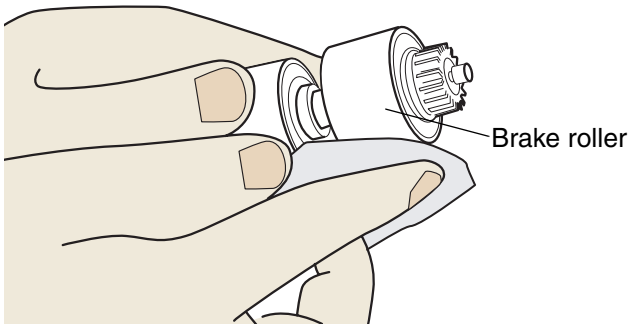


7. Remove the Brake roller.

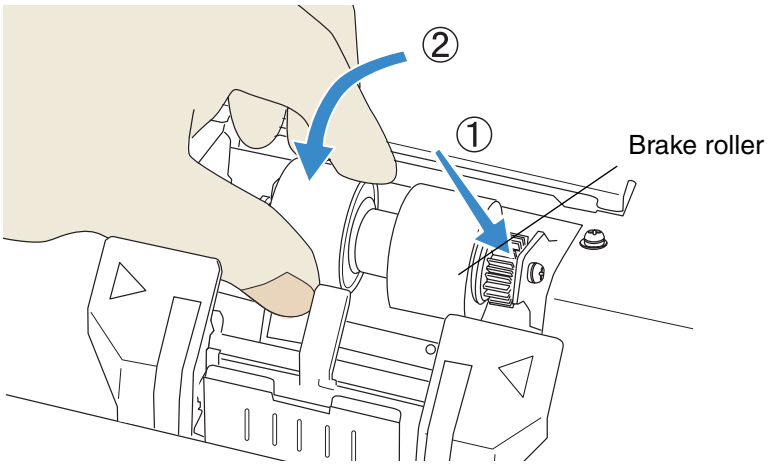
Move the roller slightly to the right, then pull it upwards to remove it, as shown below.



8. Clean the rubber surface of the Brake roller using a lint-free cloth, moistened with the cleaner F1 or isopropyl alcohol.



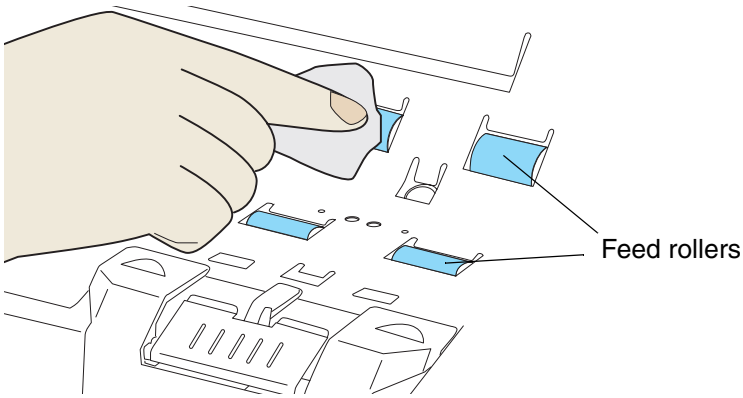
9. Install the Brake roller again after cleaning.



10. Close the Pad cover.

11. Clean the Feed rollers (metal rollers, each set consists of 2 rollers, 9 locations) on the upper side of the lower transport path using a lint-free cloth moistened with the cleaner F2.

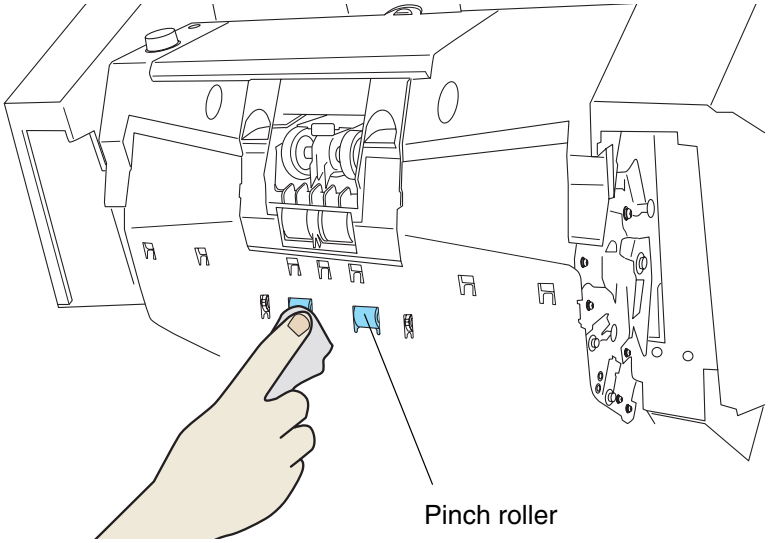
Take care especially to remove black stains on the rollers, since such stains are deteriorating the feeding performance.



ATTENTION

Do not use the cleaner F2 for any other parts. Use it only for cleaning the Feed rollers.

12. Clean the Pinch rollers (rubber rollers, each set consists of 2 rollers, 9 locations) on the upper side of the upper transport path using a lint-free cloth moistened with the cleaner F1 or isopropyl alcohol.



13. Close the ADF cover.

For details, refer to "2.3 Opening and Closing ADF" on page 12

4.5 Cleaning the Transport path and the sensors

1. **Open the ADF cover.**

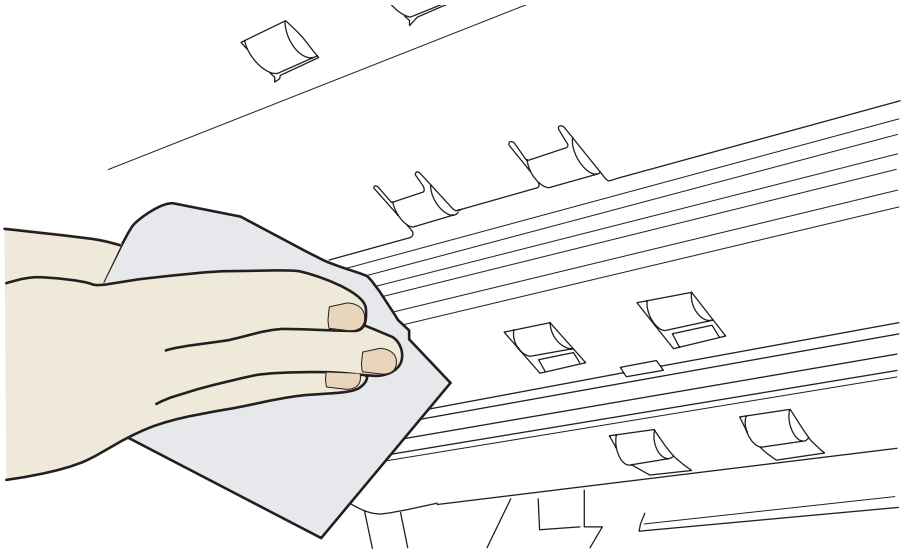
   For details, refer to "2.3 Opening and Closing ADF" on page 12

2. **Clean the whole transport path (stainless and glass parts) using a lint-free cloth moistened with the cleaner F1 or isopropyl alcohol.**

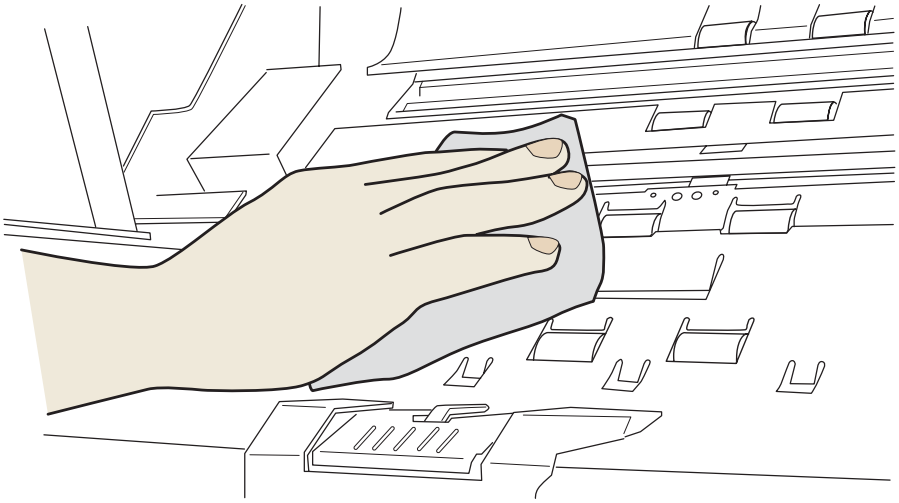
   HINT

   If the transport path is stained with paper dust or other debris, please vacuum-clean it carefully.

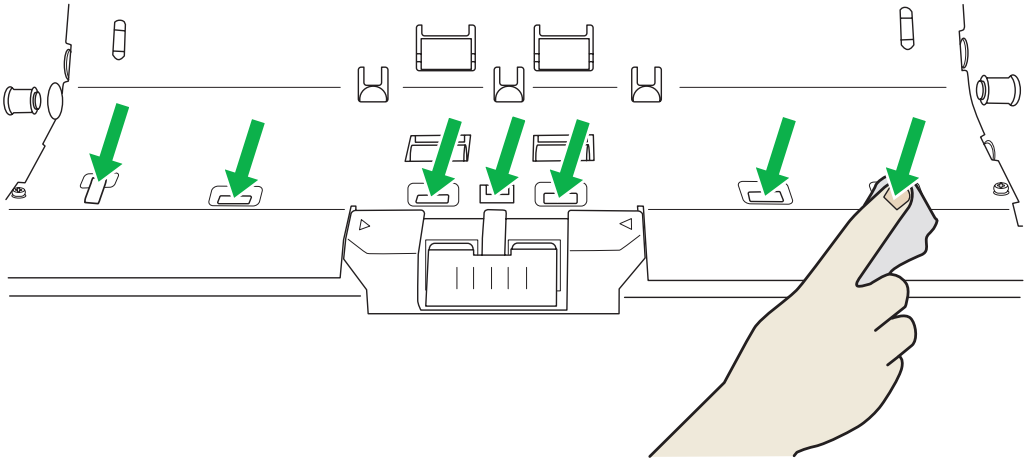
   Upper transport path



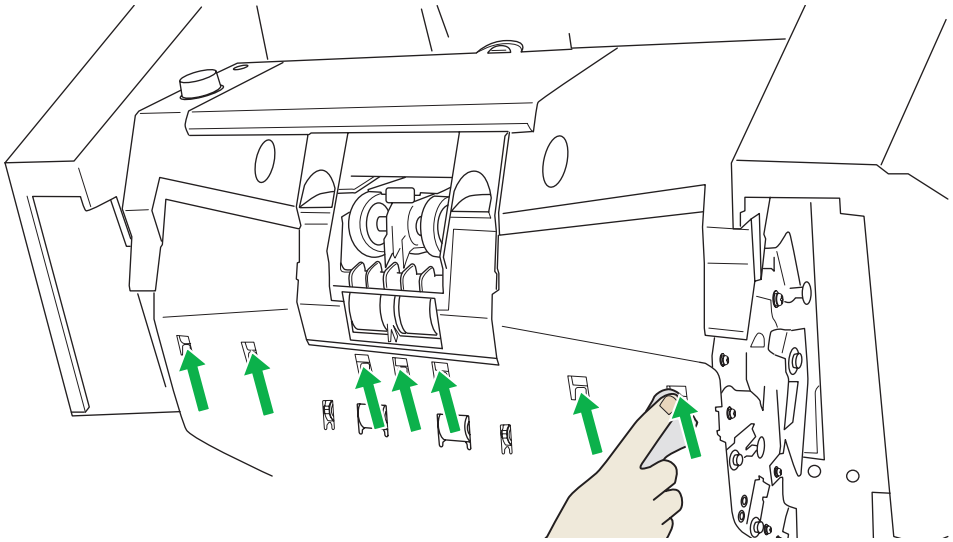
   Lower transport path



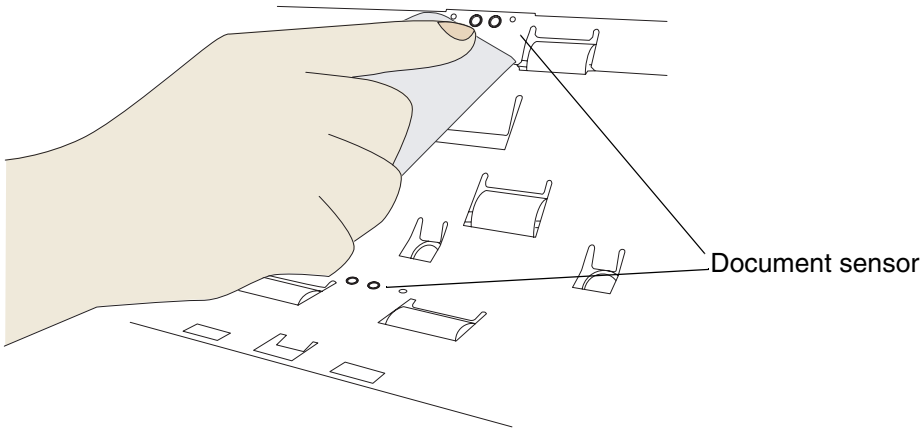
3. **Clean the Skew-detection sensor on the lower transport path (7 units at 1 location) using a lint-free cloth moistened with the cleaner F1 or isopropyl alcohol.**



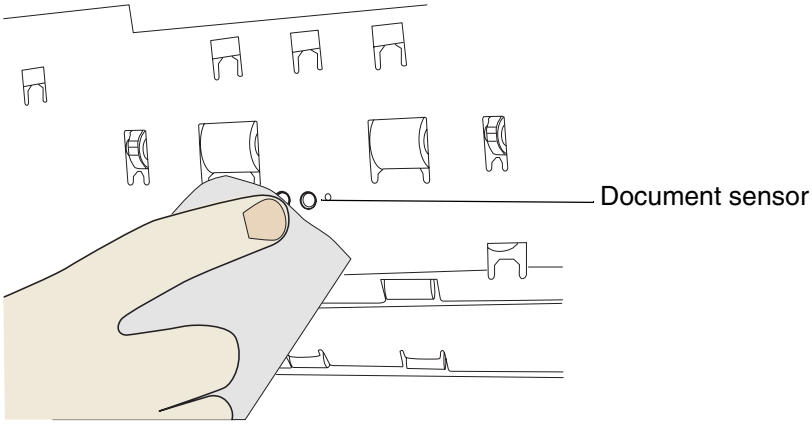
4. **Clean the Skew-detection sensor on the upper transport path (7 units at 1 location) using a lint-free cloth moistened with the cleaner F1 or isopropyl alcohol.**



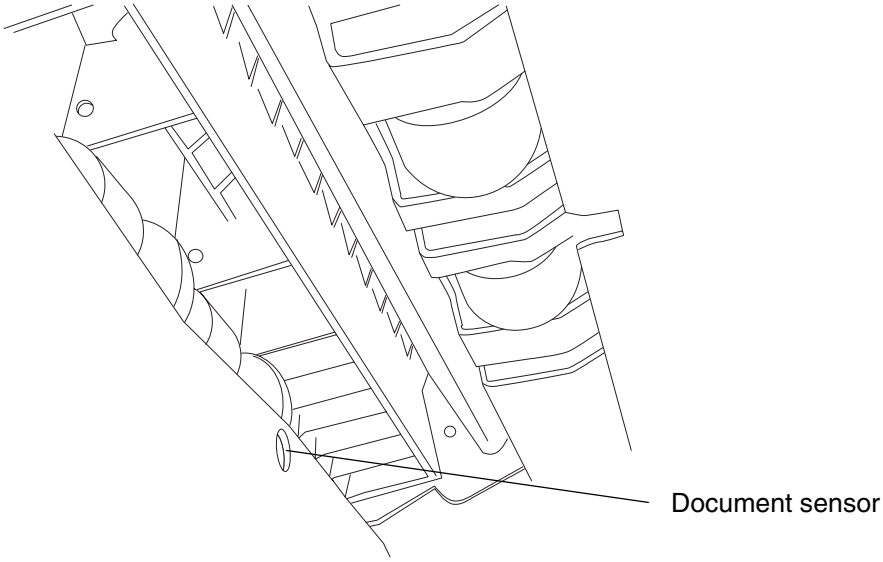
5. **Clean the Document sensors on the lower transport path (2 units at 3 locations) using a lint-free cloth moistened with the cleaner F1 or isopropyl alcohol.**



6. **Clean the Document sensors on the upper transport path (2 units at 3 locations) using a lint-free cloth moistened with the cleaner F1 or isopropyl alcohol.**



7. **Clean the Document sensor on the upper transport path (1 unit at 1 location) using a cotton swab moistened with the cleaner F1 or isopropyl alcohol.**



8. **Close the ADF cover.**

For details, refer to "2.3 Opening and Closing ADF" on page 12.

5 REPLACEMENT OF CONSUMABLES

This chapter describes how to replace consumables.

5.1 Consumables and Replacement Cycle..... 116

5.2 How to check and reset the Consumables Counter..... 117

5.3 Replacing the Pad 121

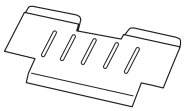
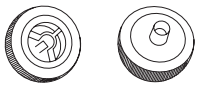
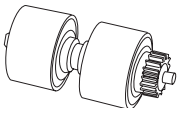
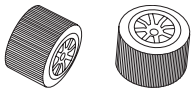
5.4 Replacing the Pick Roller 122

5.5 Replacing the Separator Rollers 124

5.6 Replacing the Brake roller 127

5.1 Consumables and Replacement Cycle

The following table lists the Part No. and the standard replacement cycle of the consumables. It is recommended that you stock extra consumables before the ones in the scanner reach the end of Their service life. The consumables must be replaced periodically. You can check the number of scanned pages for the Pad, the Pick roller, the Brake roller and the Separation roller. For further details, refer to "5.2 How to check and reset the Consumables Counter" on page 117

Part Name	Part No.	Standard replacement cycle
Pad 	PA03450-K014	600,000 sheets or 1 year
Pick Rollers 	PA03450-K011	600,000 sheets or 1 year
Brake Roller 	PA03450-K013	600,000 sheets or 1 year
Separator Rollers 	PA03450-K012	600,000 sheets or 1 year
Print Cartridge	CA00050-0262	4,000,000 characters

The replacement cycle is based on the printing on Letter/A4 woodfree paper or wood containing paper documents (64 g/m^2). The replacement cycle may differ due to paper quality, print density or paper type.
The print cartridge is a consumable for the imprinter option (sold separately). It can be used for the Pre- and Post-imprinter.
For the purchase of the consumables, contact the FUJITSU scanner dealer where you purchased your scanner.

Use only the consumables specified by PFU Limited. Do not use any consumables from other manufacturers.

5.2 How to check and reset the Consumables Counter

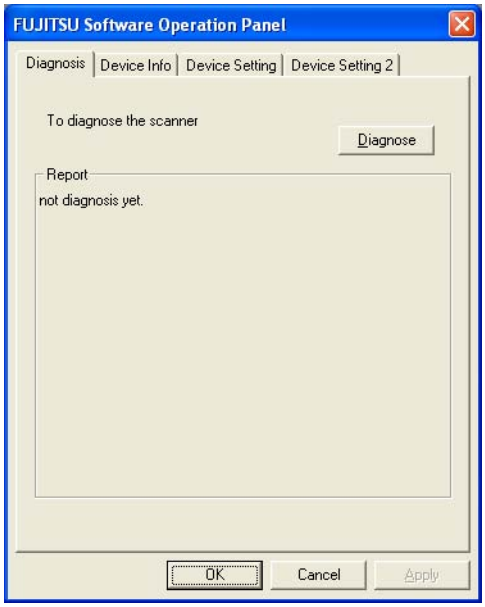
For confirming the abrasion of consumables and resetting the counters, use [Software Operation Panel] on you PC as shown below.

■ Checking consumables

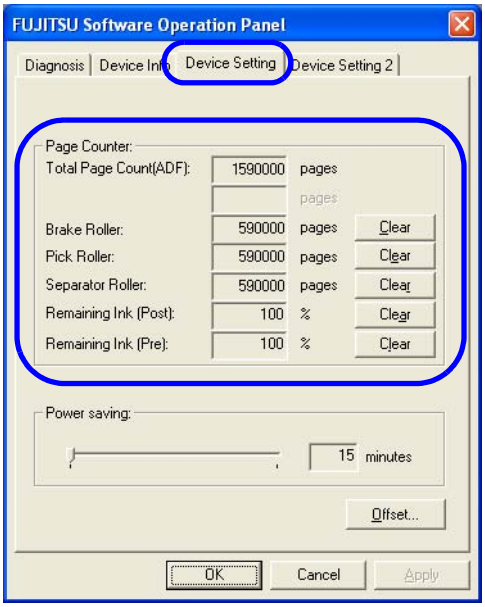
1. **Turn on the scanner and confirm if it is connected correctly to you PC.**

2. **From the [Start] menu select [All Programs]→[Scanner Utility for Microsoft Windows]→[Software Operation Panel] .**

⇒The [Software Operation Panel] window will be displayed.



3. Select the [Device Settings] tab.



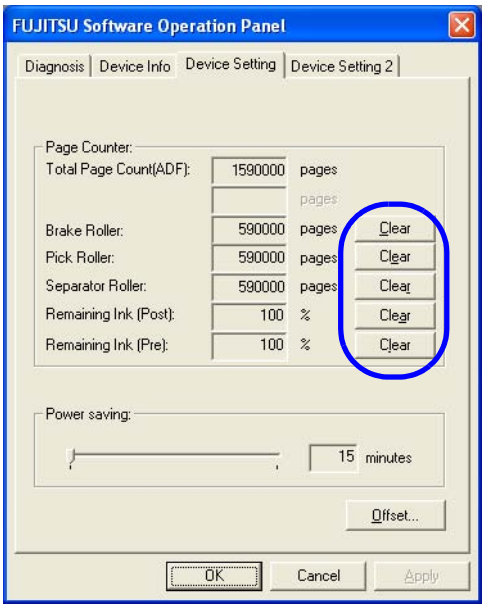
In this window, the following items can be confirmed.

Number of scans (ADF):	The total number of scanned sheets.
Pad:	The number of sheets scanned since last exchange of the Pad.
Brake roller:	The number of sheets, scanned since last exchange of the Brake roller.
Pick rollers:	The number of sheets, scanned since last exchange of the Pick rollers.
Separator rollers:	The number of sheets, scanned since last exchange of the Separator rollers.
Remaining ink:	The remaining ink of the imprinter (sold separately) ink cartridge. (Only displayed when the imprinter option is used)

■ Resetting of the consumable counters

Reset the consumable counter(s) every time you replace the consumable(s), following the procedure given below.

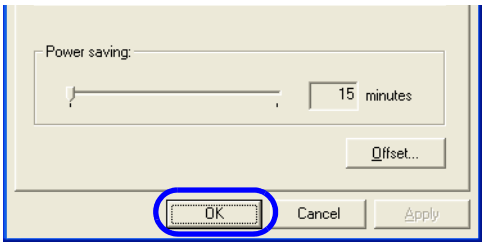
1. Click the [Clear] button beside the replaced consumable.



2. Click the [OK] button on the displayed confirmation message.

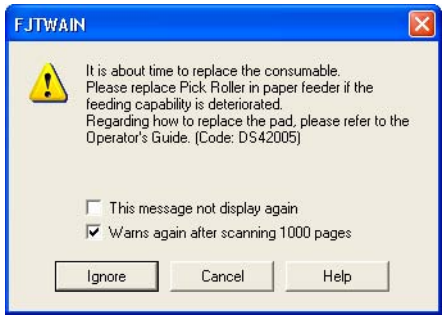
⇒The value of the counter will be reset to “0”. (“100”, in case of “Remaining Ink”).

3. To close the window of the [Software Operation Panel], click the [OK] button.



■ Consumables replacement message

The following message may appear while using the scanner:


FJTWAIN
It is about time to replace the consumable.
Please replace Pick Roller in paper feeder if the feeding capability is deteriorated.
Regarding how to replace the pad, please refer to the Operator's Guide. (Code: DS42005)
This message not display again
Warns again after scanning 1000 pages
Ignore
Cancel
Help

Replace consumables when this message is displayed.

After clicking the [Ignore] button, this message will disappear and scanning will continue.

Replace the consumable as soon as possible.

As a default, this message appears again after 1,000 scans. If you do not wish this message to display, click the [this message not display again].

To stop scanning and replace the consumable, click the [Cancel] button.

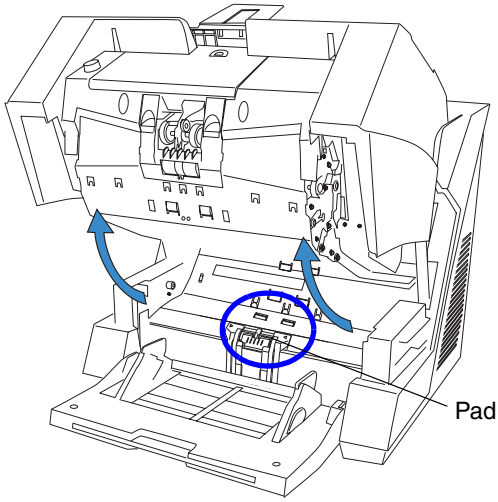
For the replacement of consumables, refer to the following sections.

Pad:	"5.3 Replacing the Pad" on page 121
Pick rollers:	"5.4 Replacing the Pick Roller" on page 122
Separator rollers:	"5.5 Replacing the Separator Rollers" on page 124
Brake roller:	"5.6 Replacing the Brake roller" on page 127

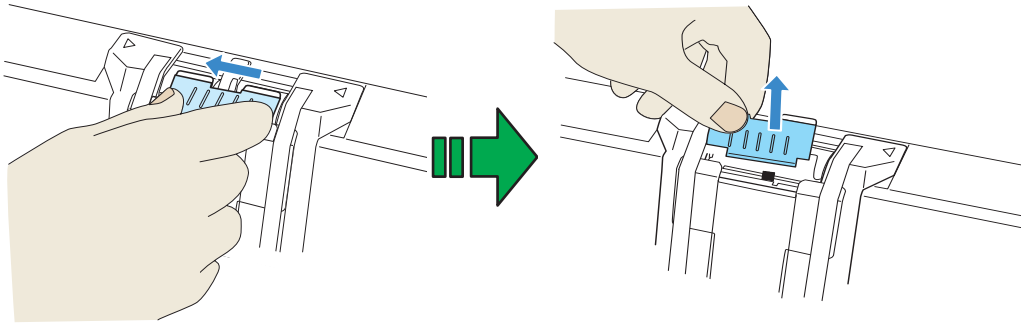
5.3 Replacing the Pad

1. **Open the ADF cover.**

   Refer to "2.3 Opening and Closing ADF" on page 12.



2. **Move the Pad to the left, than pull it up in order to remove it from the scanner.**



3. **Install the new Pad in the reversed order of the removable.**

4. **Close the ADF cover.**

   Refer to "2.3 Opening and Closing ADF" on page 12.

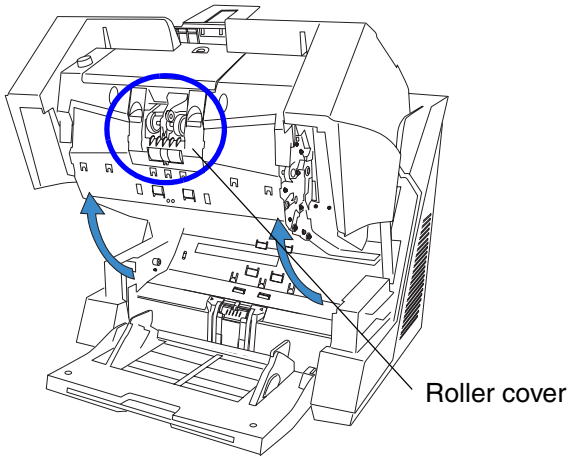
5. **Reset the Pad counter.**

   Refer to "5.2 How to check and reset the Consumables Counter" on page 117.

5.4 Replacing the Pick Roller

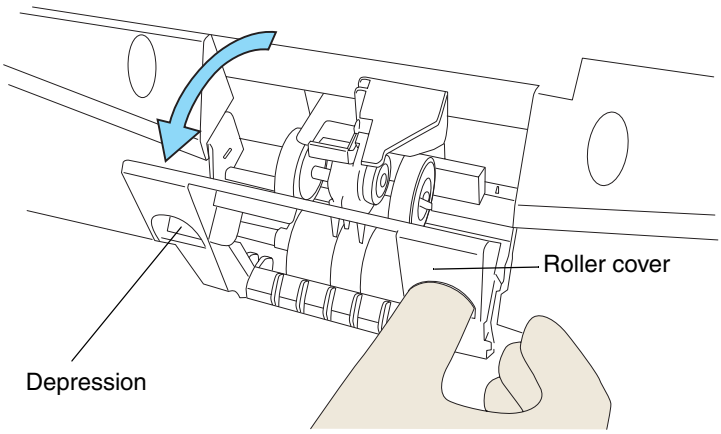
1. Open the ADF cover.

Refer to “2.3 Opening and Closing ADF” on page 12.

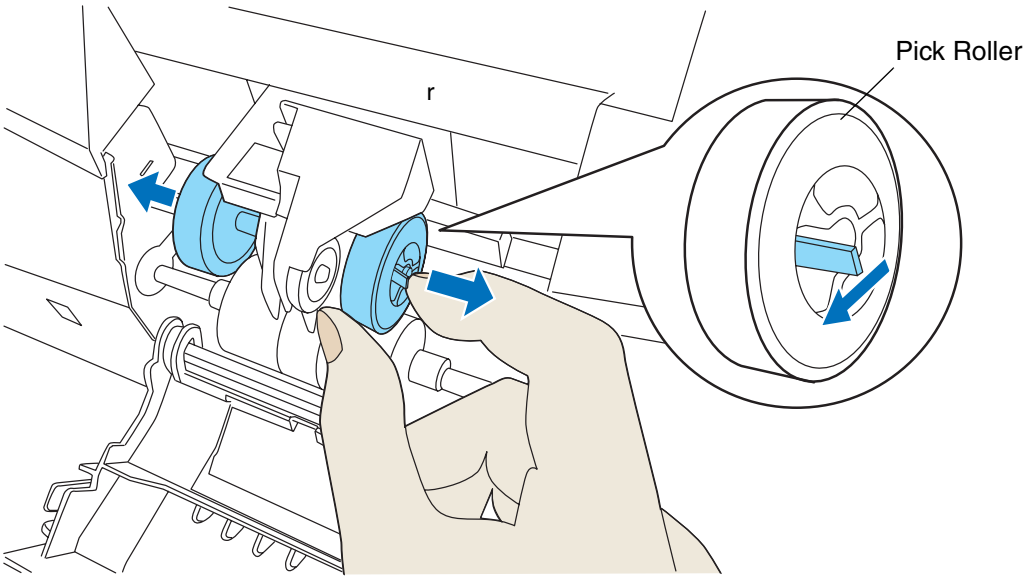


2. Open the roller cover.

Put your fingers in the depression on the left and right side and pull the cover towards you to open it.



3. **While pulling up the tab away from the shaft, slide the Pick rollers (2 rollers, left and right) from the shaft for removal.**



4. **Install the new Pick rollers (2 rollers, left and right) in the reversed order of the detachment.**

   Put the roller correctly on the shaft, until it is locked in place.

5. **Close the roller cover.**

6. **Close the ADF cover.**

   Refer to "2.3 Opening and Closing ADF" on page 12

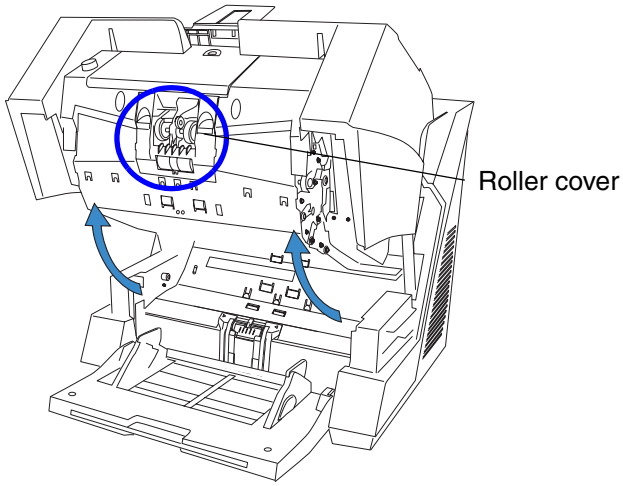
7. **Reset the Pick roller counter**

   Refer to "5.2 How to check and reset the Consumables Counter" on page 117

5.5 Replacing the Separator Rollers

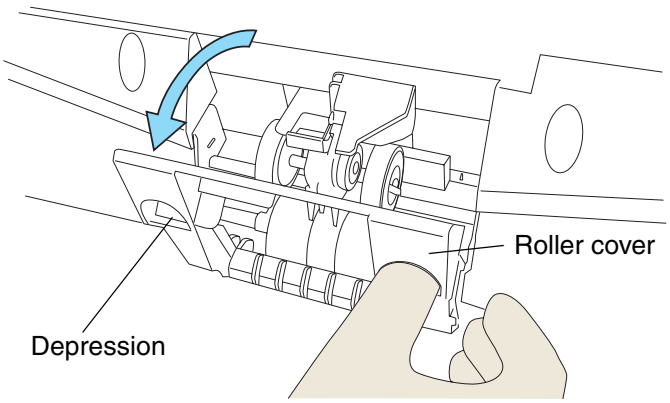
1. Open the ADF cover.

Refer to “2.3 Opening and Closing ADF” on page 12.

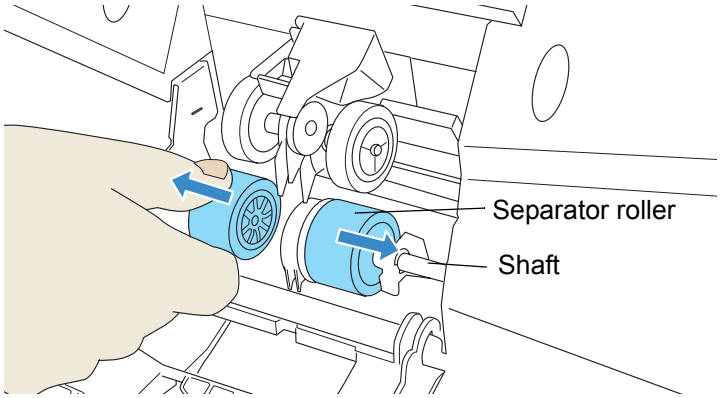


2. Open the Roller cover.

Put your fingers in the depressions on the left and right side and pull the cover towards you to open it.



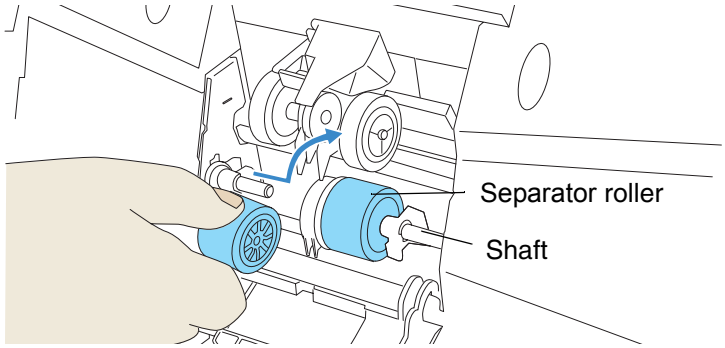
3. Slide Separator rollers (2 rollers, left and right) away from each other along the shafts for removal as shown below.



⇒The shaft will be locked in outer position and stays there.

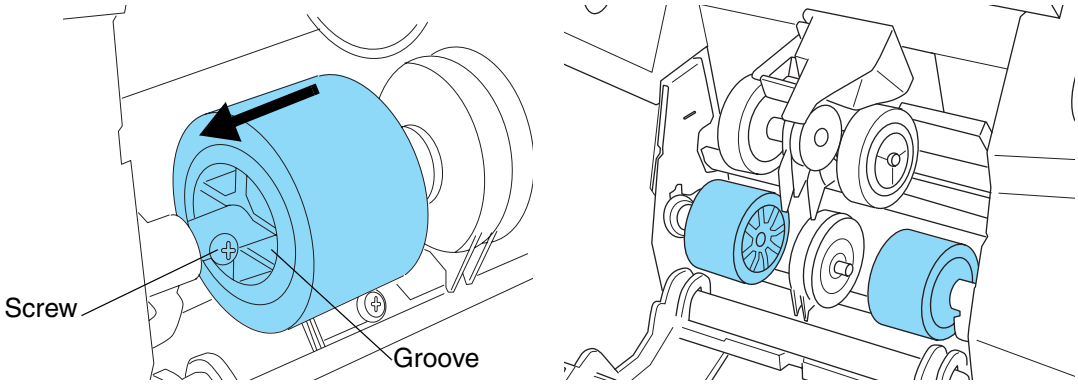
4. Remove the rollers from their shafts.

Remove both, the left and the right rollers.



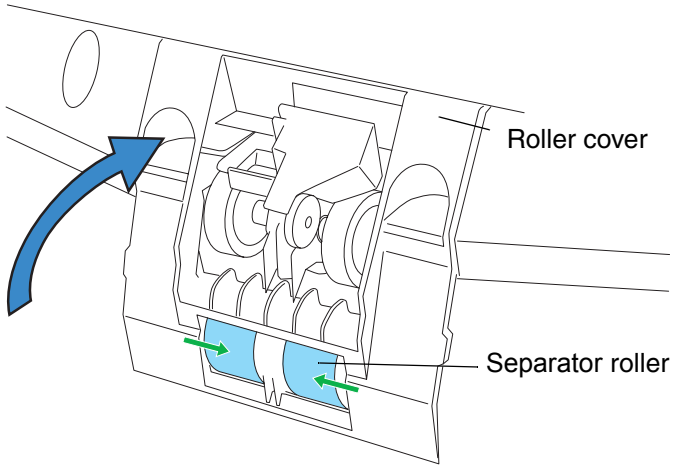
5. Put the new rollers (2 rollers, left and right) on the shafts.

Align the screw with the groove on the Separation roller to put the roller on the shaft.



6. Close the roller cover.

⇒The Separator rollers will move to their original position automatically.



7. Close the ADF cover.

Refer to “2.3 Opening and Closing ADF” on page 12.

8. Reset the counter of the Separation roller.

Refer to “5.2 How to check and reset the Consumables Counter” on page 117.

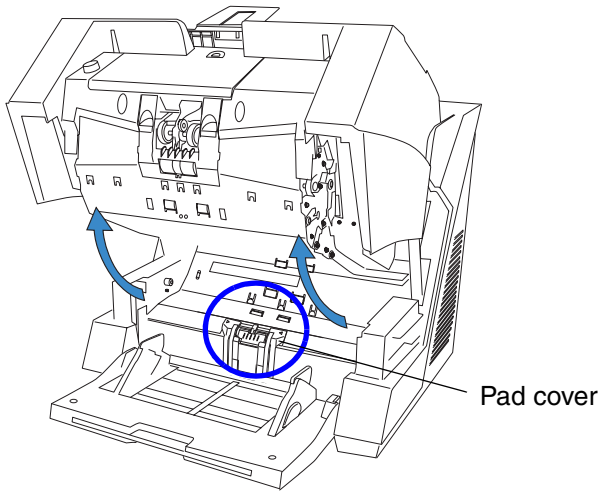
5.6 Replacing the Brake roller

1. **Move the Hopper down to the "low" position if it is set in an upper level.**

   For details, refer to “2.5 Setting the Hopper Height” on page 15.

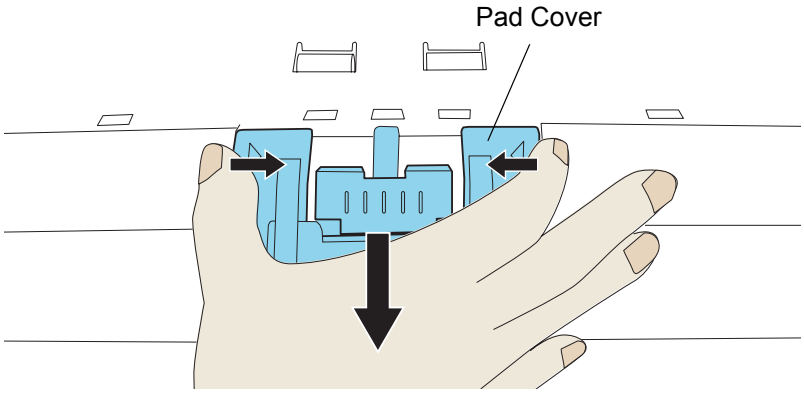
2. **Open the ADF cover.**

   Refer to “2.3 Opening and Closing ADF” on page 12.



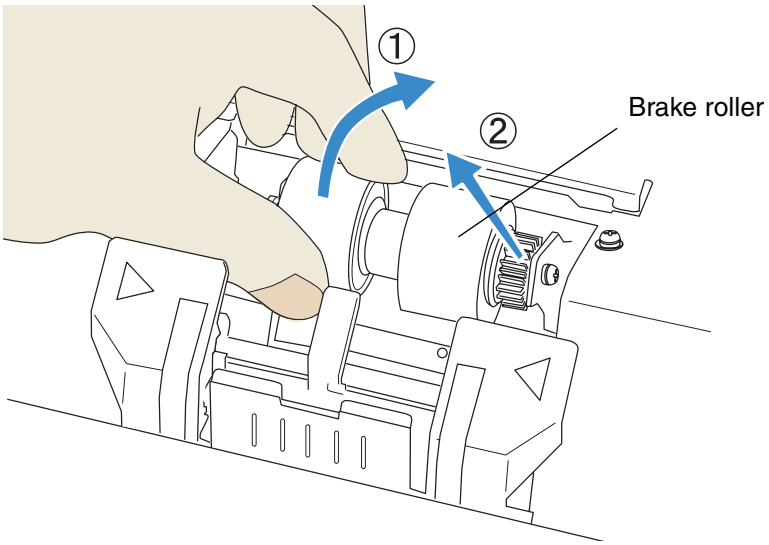
3. **Open the Pad cover on the lower transport path.**

   Grab both sides of the cover, press to the inside and pull down (towards you), as shown in the illustration below.



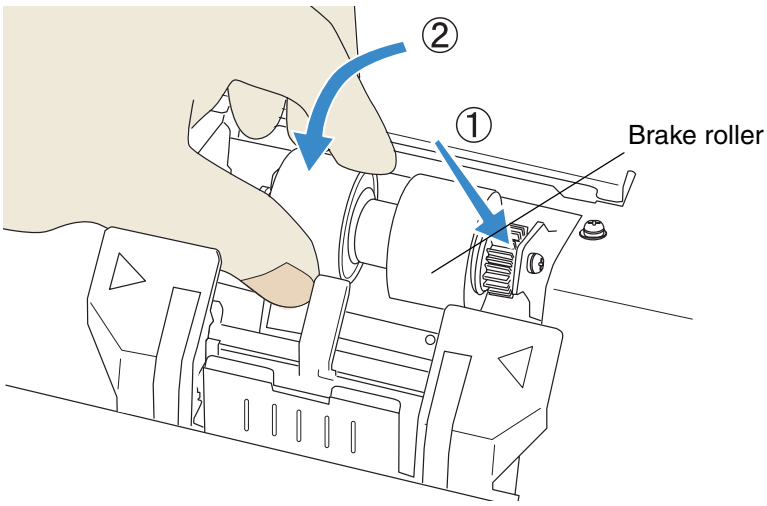
4. Remove the Brake roller

Lift up the left side of the Brake roller and remove the left shaft. Then pull the right shaft out of its hole to remove it.



5. Install the new Brake roller.

After inserting the right end of the shaft into the hole, attach the left end.



6. Close the Pad cover.

7. Close the ADF cover.

Refer to “2.3 Opening and Closing ADF” on page 12.

8. Reset the Brake roller counter.

Refer to “5.2 How to check and reset the Consumables Counter” on page 117.

6 SOLVING COMMON PROBLEMS

This chapter describes how to clear document jams, how to remedy other problems, items to be checked before contacting an authorized service provider and how to check labels on the scanner.

6.1 Clearing Document Jams 130

6.2 Error messages of the Operator panel 132

6.3 Troubleshooting 135

6.4 Before Contacting a Service Provider 148

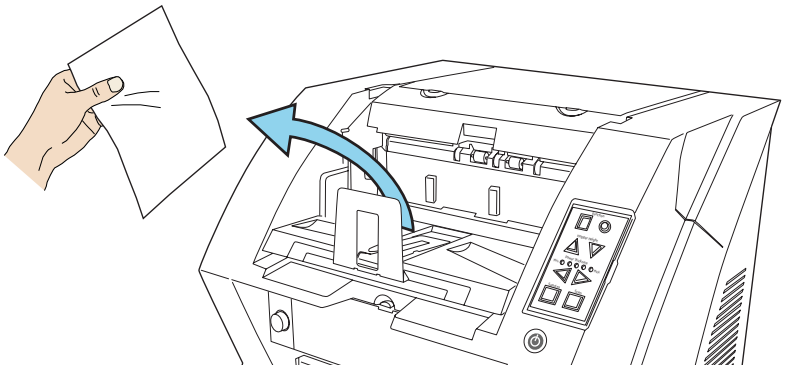
6.5 Labels on the Scanner 150

6.1 Clearing Document Jams

When documents have been jammed during scanning, use the following procedure to remove them from the scanner.

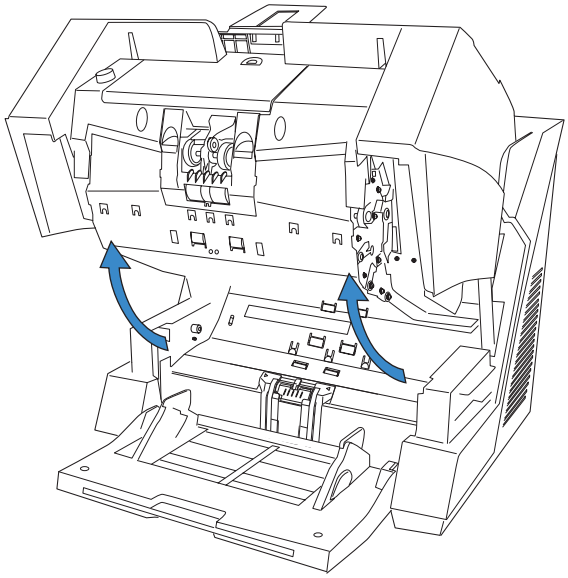
- Take care not to pinch your fingers inside the ADF.
- The glass inside the ADF becomes hot during operation. Take care not to burn yourself.
- Do not use force to remove jammed papers. Remove jammed documents after opening the ADF cover.

1. Remove all remaining documents from the scanner before removing jammed documents.

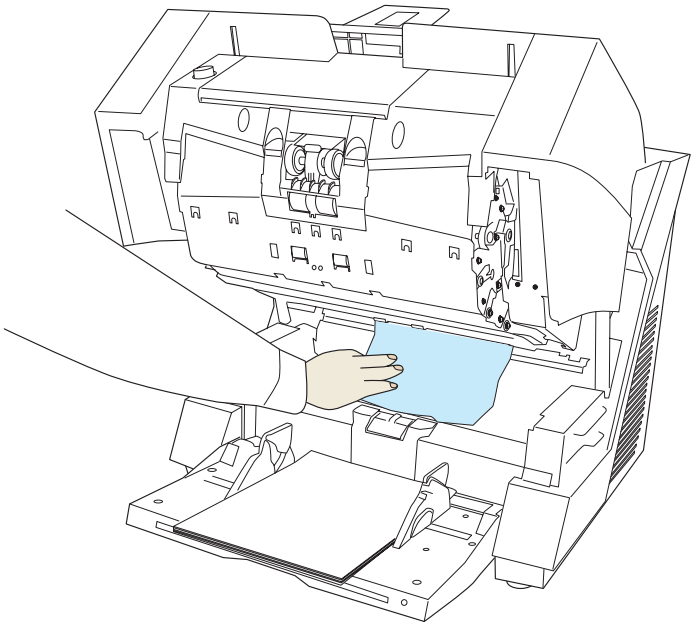


2. Open the ADF cover.

Refer to "2.3 Opening and Closing ADF" on page 12.



3. Remove the jammed documents.



ATTENTION

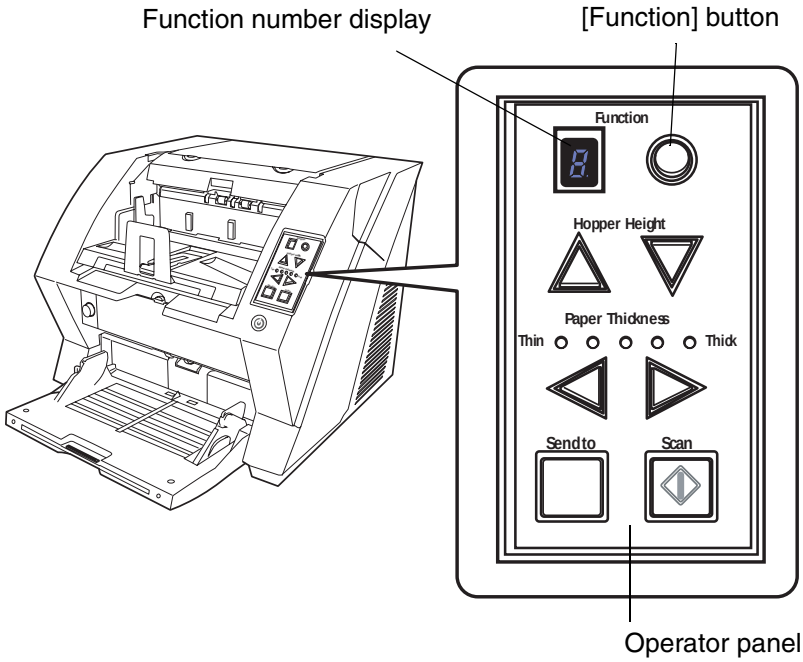
Clips and staples cause the documents to jam when fed through the scanner. Therefore, remove all staples and clips from the documents before scanning, and examine if the transport path is free from any debris.

4. Close the ADF cover.

Refer to .“2.3 Opening and Closing ADF” on page 12.

6.2 Error messages of the Operator panel

When a problem occurs, [U] followed by a number will be displayed on the function number display in case of an temporary error. In case of an hardware alarm, [E] and a number will be displayed alternately. A temporary error can be solved by the user, the resolving of hardware alarms requires professional service support from an authorized FUJITSU scanner service partner.



When the Error Recovery Guide is installed on your PC, its window will be displayed when stating up Windows. When hardware alarms or temporary errors occur, the name and code of the error, as well as further information will be displayed.
Note down the displayed information and click the [Details] button to obtain further solutions for troubleshooting.

HINT

Error Recovery Guide is stored on the Setup CD-ROM. More details about the installation can be found in the fi-5900C Getting Started under “2.3 Installing the Scanner Application”.

■ Temporary Errors

[U] and a number will be displayed alternately.

Display	Meaning	Solution
U1	A paper jam occurred.	1. Remove the jammed document. Refer to "6.1 Clearing Document Jams" on page 130 2. Confirm if the document conditions are appropriate for scanning with the ADF. (Refer to "7.2 Document Quality" on page 153)
U2	A Multifeed occurred.	When pushing the [Send to] on the Operator panel, the multi fed papers will be ejected.
U4	The ADF or the Pre-Imprinter cover is opened.	Close the ADF cover or Pre-Imprinter cover correctly.
U6	The print cartridge of the imprinter (sold separately) is not set.	This error occurs only when the imprinter option (sold separately) is used. Refer to the "fi-590PRF/fi-590PRB Imprinter Operator Guide" for further details.
U8	One of the following error occurred: 1. Document sensors are dirty. 2. The stacker is full. 3. The Brake roller or Separator rollers are not installed properly.	1. Clean the document sensors. For details, refer to "4.5 Cleaning the Transport path and the sensors" on page 110. 2. Verify that the number of sheets ejected to the stacker is below stacker's capacity, and that the Pick roller is not set for manual feeding. 3. Verify that the both rollers are installed properly. For details, refer to "5.5 Replacing the Separator Rollers" on page 124 and "5.6 Replacing the Brake roller" on page 127.

* When pushing the [Scan] or [Send to] button, the error indication on the function number display will disappear and the scanner goes into the ready status.

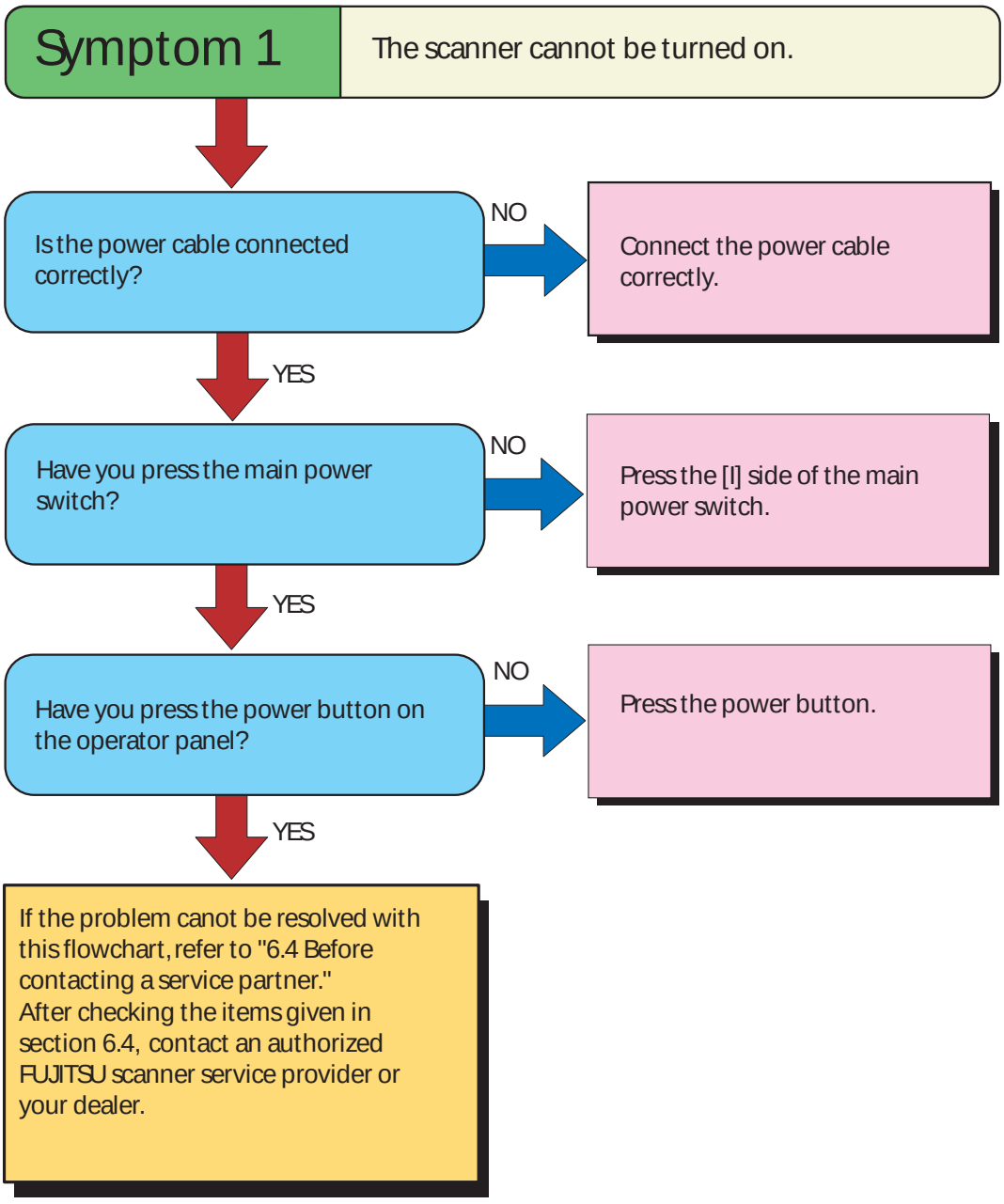
■ Hardware Alarms

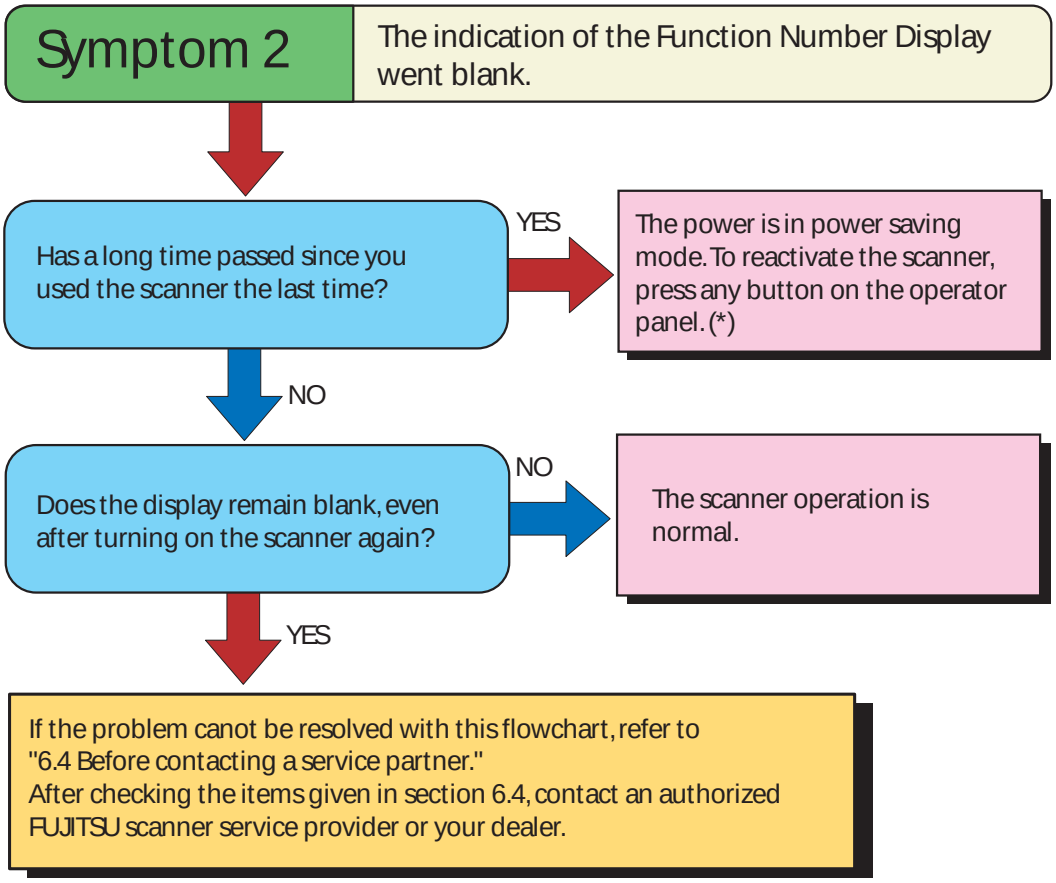
[E] and a number will be displayed alternately.

Display	Meaning	Solution
E0	Error in the Hopper or Stacker	When you encounter any alarm, turn off and on the scanner. If the alarm is still displayed on the Function Number Display, contact the dealer where you purchased the scanner or an authorized FUJITSU scanner service provider.
E2	Optical system error (front)	
E3	Optical system error (back)	
E4	The motor fuse has blown out.	
E5	The lamp fuse has blown out.	
E6	Operator panel error	
E7	Trouble occurred in the internal memory (EEPROM).	
E8	The SCSI fuse has blown out.	
E9	Image memory error	
EA	Imprinter error	
Ec	Image memory error	
Ed	SCSI interface or USB interface controller error	
EF	Background switching mechanism error	
E10	ROM error	
E11	Cooling fan error	
E12	Heater error	
E15	Extended memory error	Confirm the following: 1. Is the used additional memory compatible? 2. Is the additional memory installed correctly? 3. Is the additional memory damaged? Note that this error will be displayed only three times after powering the scanner on. After that, the scanner will perform scanning in the state of no additional memory installed. When you encounter this E15 error, turn off and on the scanner. If the alarm is still displayed on the Function Number Display, contact the dealer where you purchased the scanner or an autho-rized FUJITSU scanner service provider.
E16	Option board error	When you encounter any alarm, turn off and on the scanner. If the alarm is still displayed on the Function Number Display, contact the dealer where you purchased the scanner or an authorized FUJITSU scanner service provider.
E17	The imprinter fuse has blown out.	
E18	Sensor error	
E19	LSI error	
E1A	Troubles occurred in the communication inside of the scanner.	

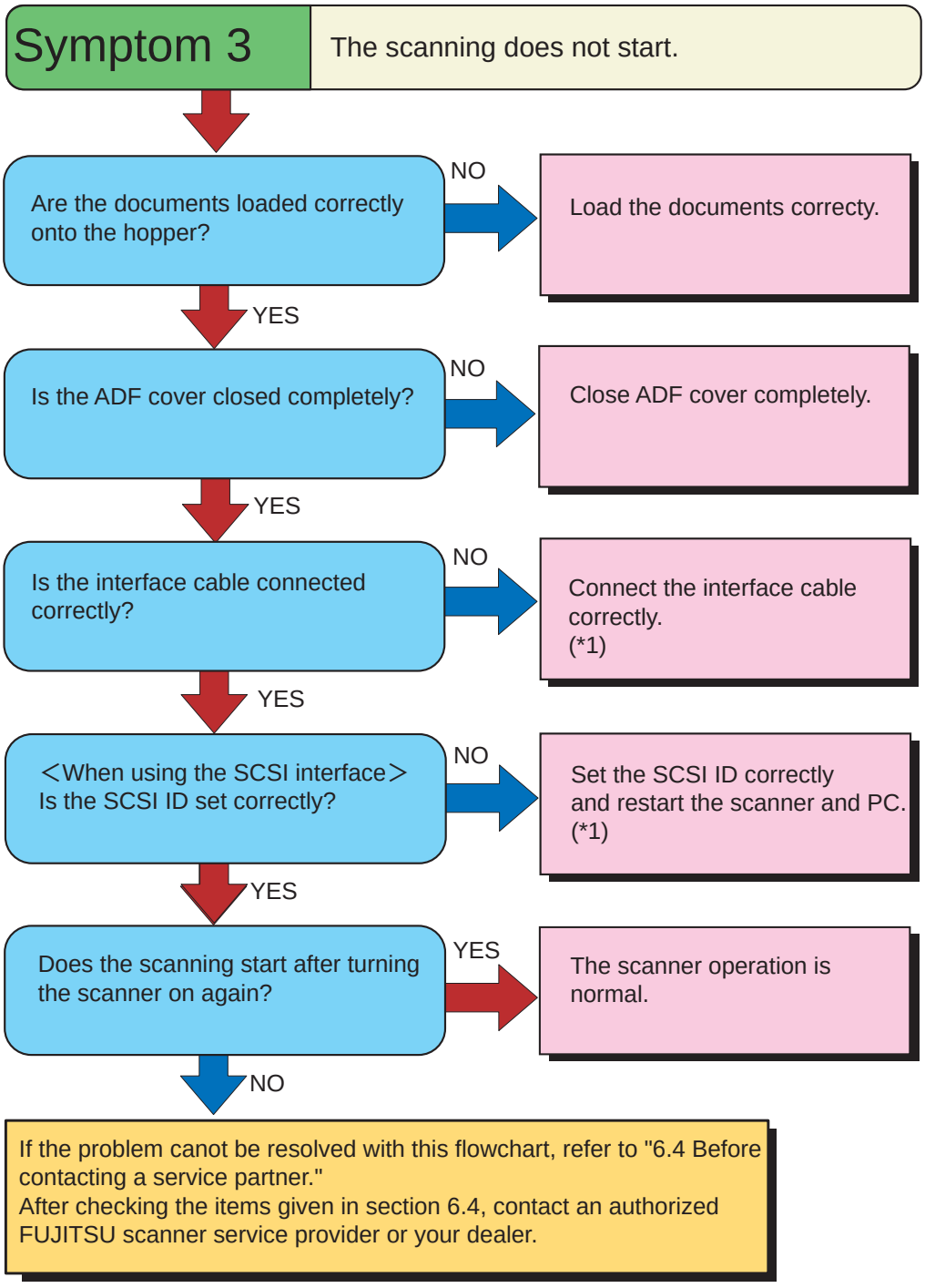
6.3 Troubleshooting

This section describes common troubles during usage and how to remedy the troubles.
Before you ask for repair service, check the following flowchart to determine the trouble.
If you can not resolve the trouble after following the flowcharts, check the items in section "6.4 Before Contacting a Service Provider" on page 148, and then contact an authorized FUJITSU Scanner service provider.

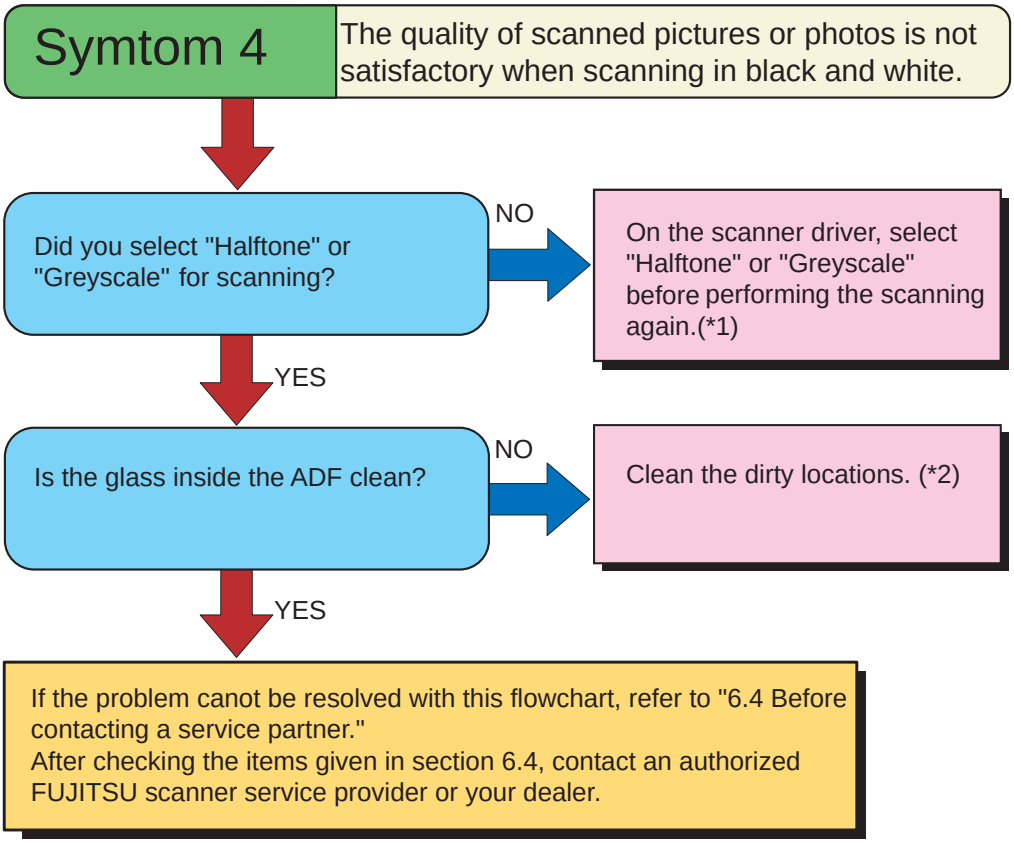

Symptom 1
The scanner cannot be turned on.
Is the power cable connected correctly?
NO
Connect the power cable correctly.
YES
Have you press the main power switch?
NO
Press the [I] side of the main power switch.
YES
Have you press the power button on the operator panel?
NO
Press the power button.
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.


Symptom 2
The indication of the Function Number Display went blank.
Has a long time passed since you used the scanner the last time?
YES
The power is in power saving mode. To reactivate the scanner, press any button on the operator panel. (*)
NO
Does the display remain blank, even after turning on the scanner again?
NO
The scanner operation is normal.
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*) Press any button except the Power button.

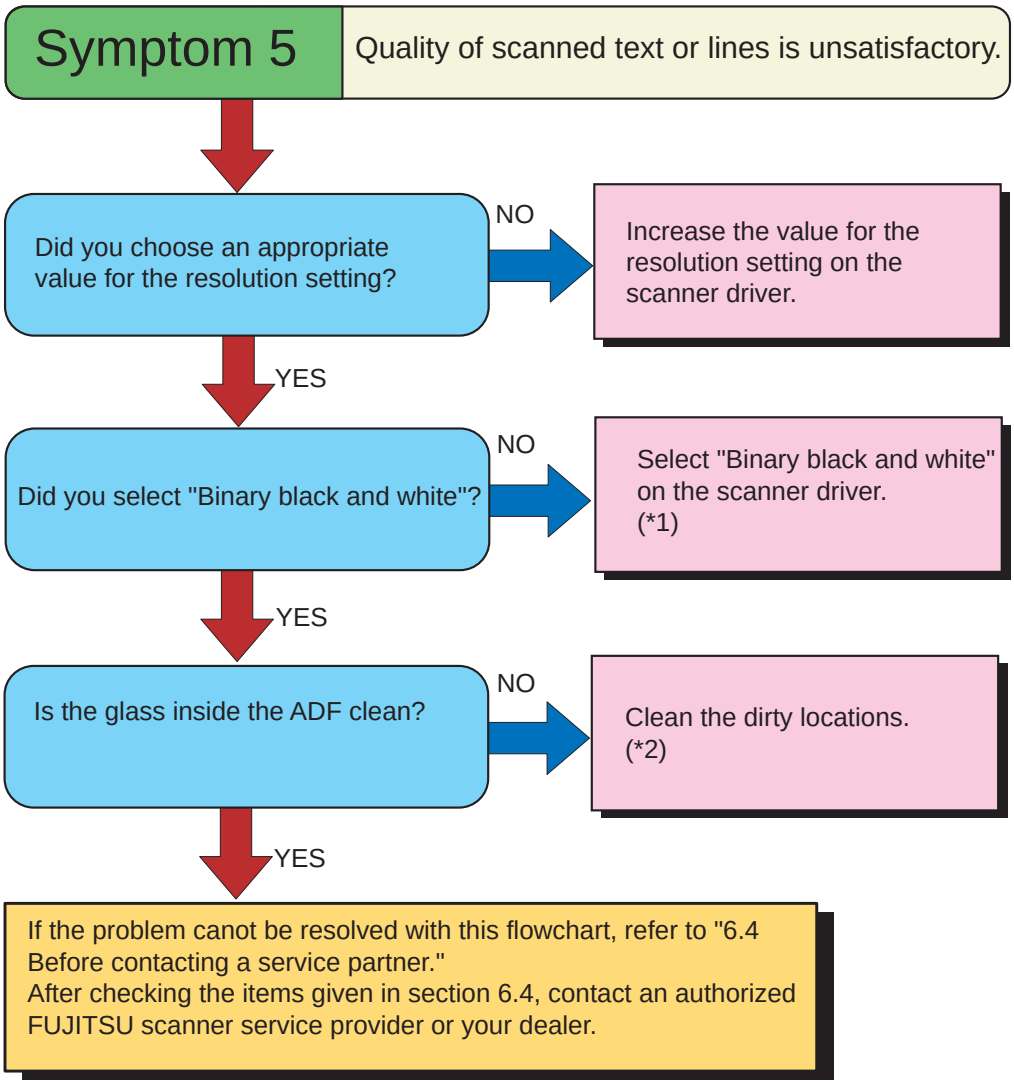

Symptom 3
The scanning does not start.
Are the documents loaded correctly onto the hopper?
NO
Load the documents correcty.
YES
Is the ADF cover closed completely?
NO
Close ADF cover completely.
YES
Is the interface cable connected correctly?
NO
Connect the interface cable correctly.
(*1)
YES
<When using the SCSI interface>
Is the SCSI ID set correctly?
NO
Set the SCSI ID correctly and restart the scanner and PC.
(*1)
YES
Does the scanning start after turning the scanner on again?
YES
The scanner operation is normal.
NO
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*1) Refer to fi-5900C Getting Stated, “2.2 Connecting the scanner to your PC”.


Symtom 4
The quality of scanned pictures or photos is not satisfactory when scanning in black and white.
Did you select "Halftone" or "Greyscale" for scanning?
NO
On the scanner driver, select "Halftone" or "Greyscale" before performing the scanning again.(*1)
YES
Is the glass inside the ADF clean?
NO
Clean the dirty locations. (*2)
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

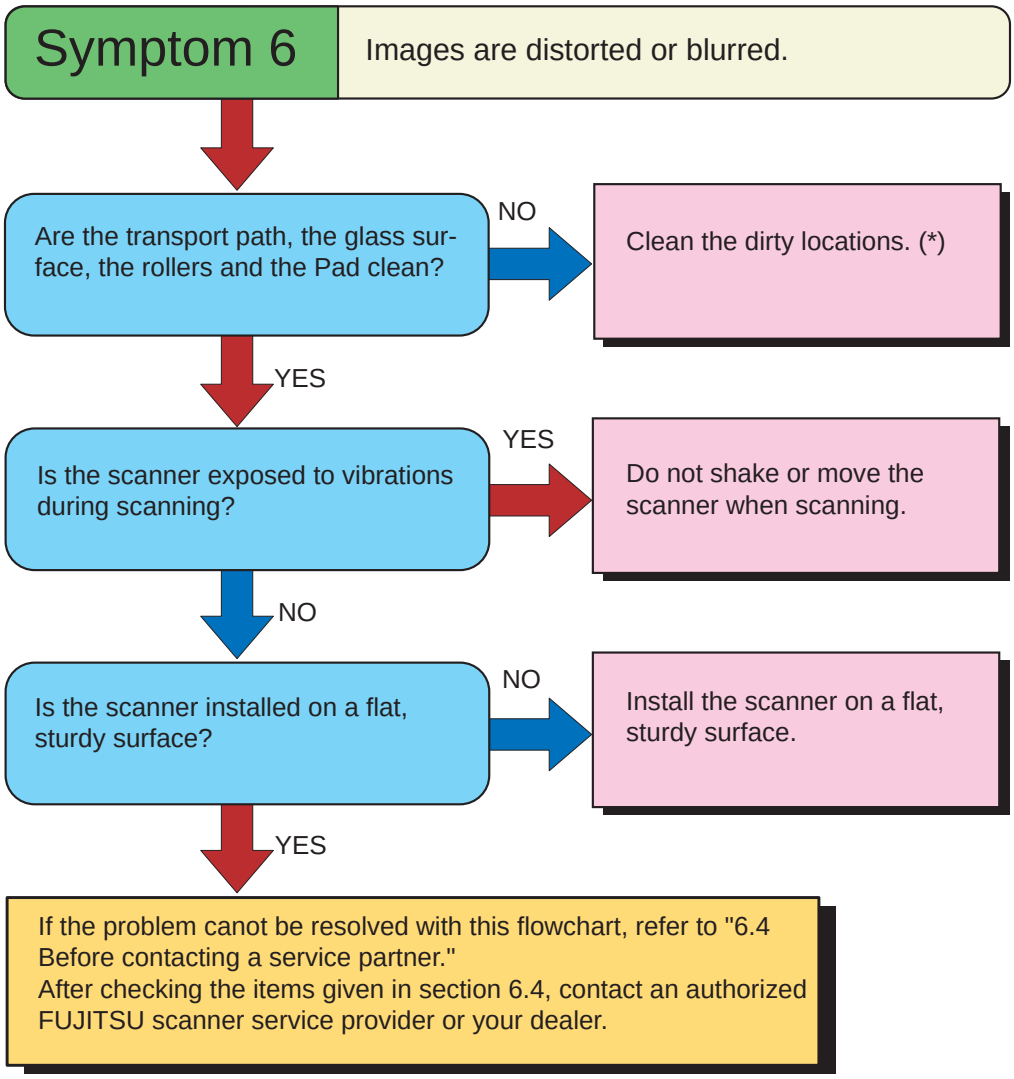
(*1) When scanning pictures or photos simply with binary black and white, the generated image might differ from the original. If possible, set the image type on the scanner driver to “halftone” or “grayscale” before scanning.

(*2) Refer to “4.5 Cleaning the Transport path and the sensors” on page 110.

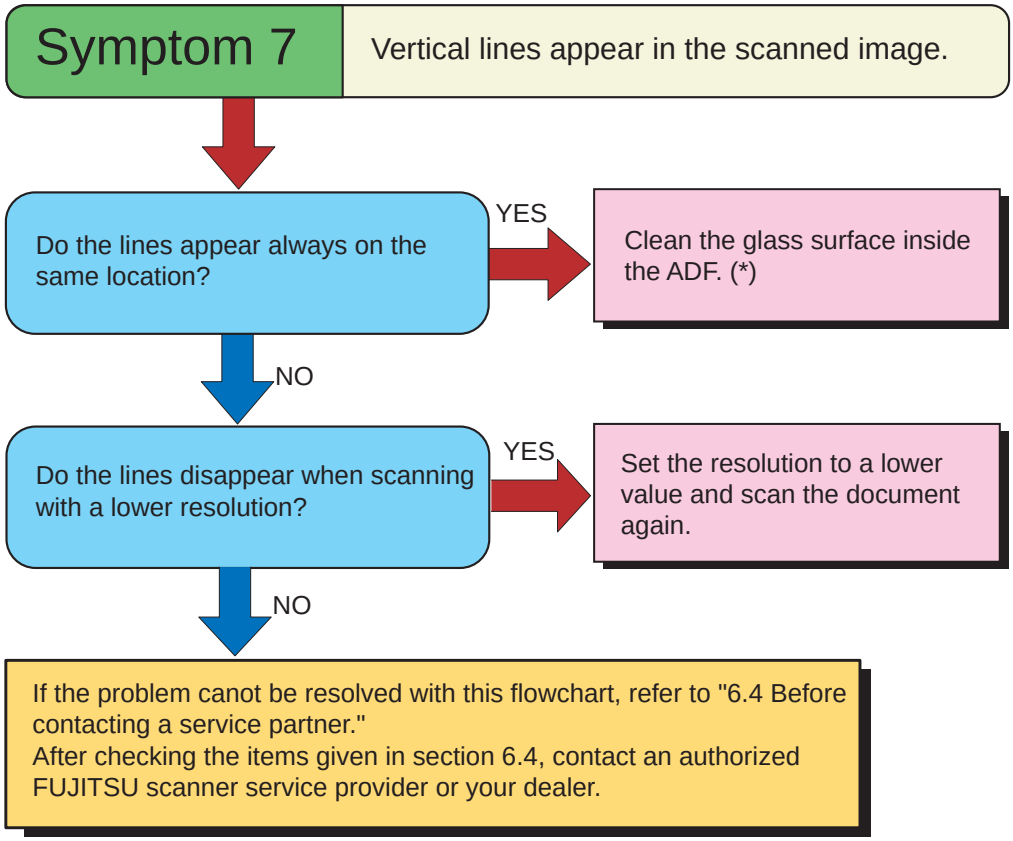

Symptom 5
Quality of scanned text or lines is unsatisfactory.
Did you choose an appropriate value for the resolution setting?
NO
Increase the value for the resolution setting on the scanner driver.
YES
Did you select "Binary black and white"?
NO
Select "Binary black and white" on the scanner driver. (*1)
YES
Is the glass inside the ADF clean?
NO
Clean the dirty locations. (*2)
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*1) When scanning with halftone, grey scale or color, the images might not become sharp and clear. If possible, set the image type on the scanner driver to “Binary black and white”.

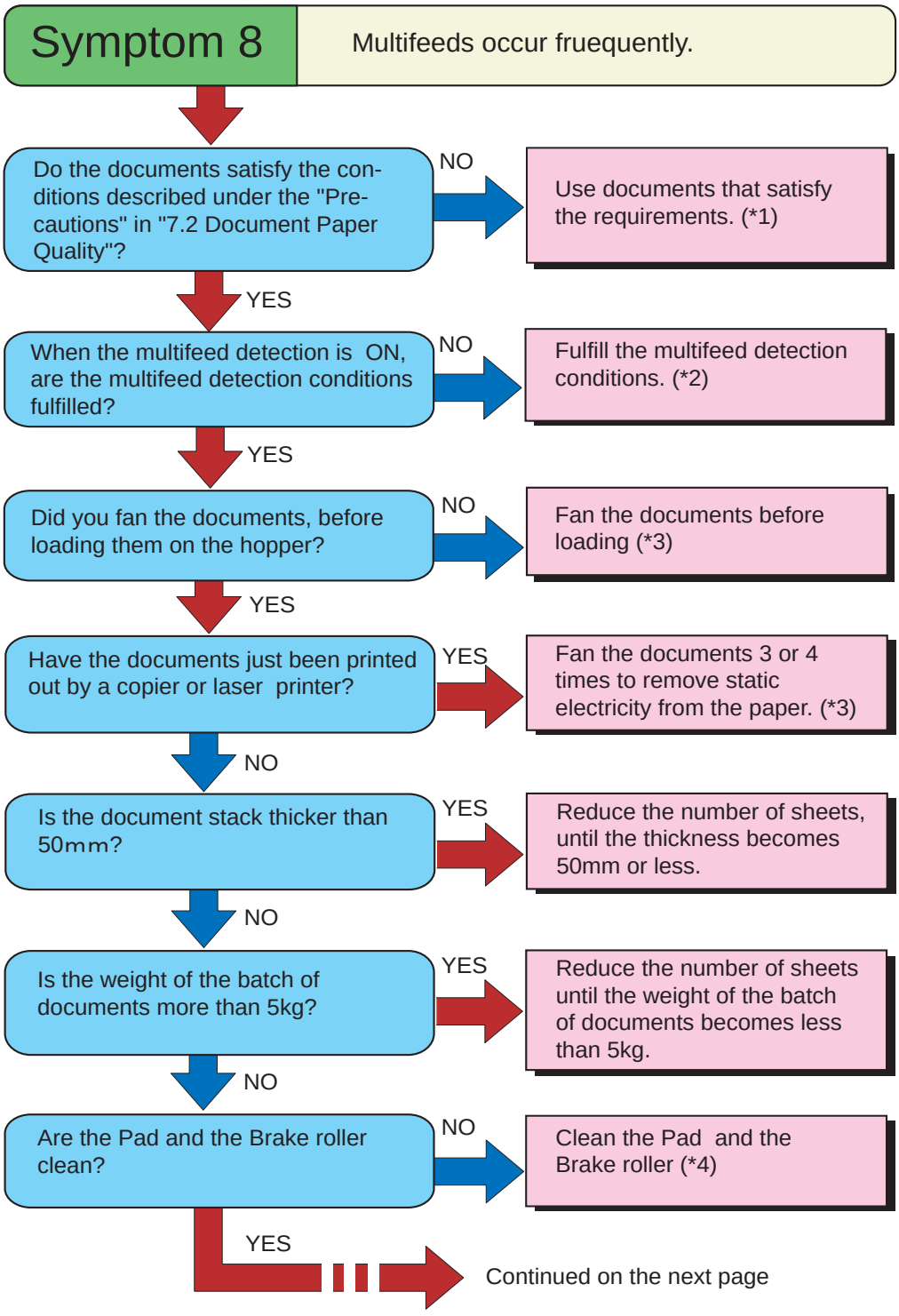
(*2) Refer to “4.5 Cleaning the Transport path and the sensors” on page 110.

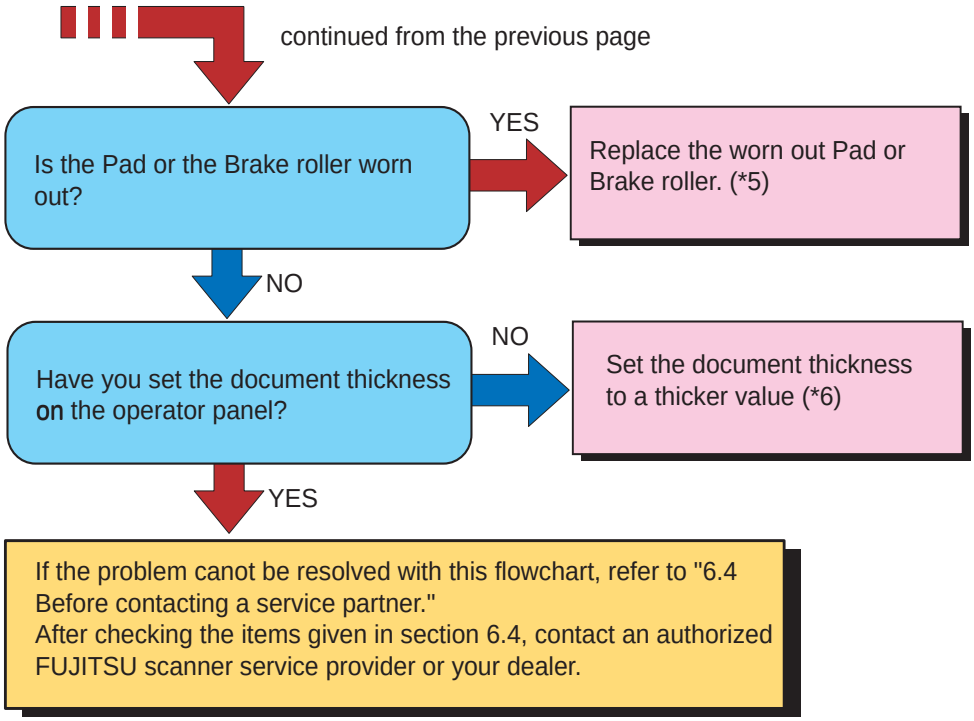

Symptom 6
Images are distorted or blurred.
Are the transport path, the glass surface, the rollers and the Pad clean?
NO
Clean the dirty locations. (*)
YES
Is the scanner exposed to vibrations during scanning?
YES
Do not shake or move the scanner when scanning.
NO
Is the scanner installed on a flat, sturdy surface?
NO
Install the scanner on a flat, sturdy surface.
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*) Refer to “4 DAILY CARE” on page 99.


Symptom 7
Vertical lines appear in the scanned image.
Do the lines appear always on the same location?
YES
Clean the glass surface inside the ADF. (*)
NO
Do the lines disappear when scanning with a lower resolution?
YES
Set the resolution to a lower value and scan the document again.
NO
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*) Refer to “4.5 Cleaning the Transport path and the sensors” on page 110.


Symptom 8
Multifeeds occur fruequently.
Do the documents satisfy the conditions described under the "Precautions" in "7.2 Document Paper Quality"?
NO
Use documents that satisfy the requirements. (*1)
YES
When the multifeed detection is ON, are the multifeed detection conditions fulfilled?
NO
Fulfill the multifeed detection conditions. (*2)
YES
Did you fan the documents, before loading them on the hopper?
NO
Fan the documents before loading (*3)
YES
Have the documents just been printed out by a copier or laser printer?
YES
Fan the documents 3 or 4 times to remove static electricity from the paper. (*3)
NO
Is the document stack thicker than 50mm?
YES
Reduce the number of sheets, until the thickness becomes 50mm or less.
NO
Is the weight of the batch of documents more than 5kg?
YES
Reduce the number of sheets until the weight of the batch of documents becomes less than 5kg.
NO
Are the Pad and the Brake roller clean?
NO
Clean the Pad and the Brake roller (*4)
YES
Continued on the next page


continued from the previous page
Is the Pad or the Brake roller worn out?
YES
Replace the worn out Pad or Brake roller. (*5)
NO
Have you set the document thickness on the operator panel?
NO
Set the document thickness to a thicker value (*6)
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*1) Refer to “7.2 Document Quality” on page 153.

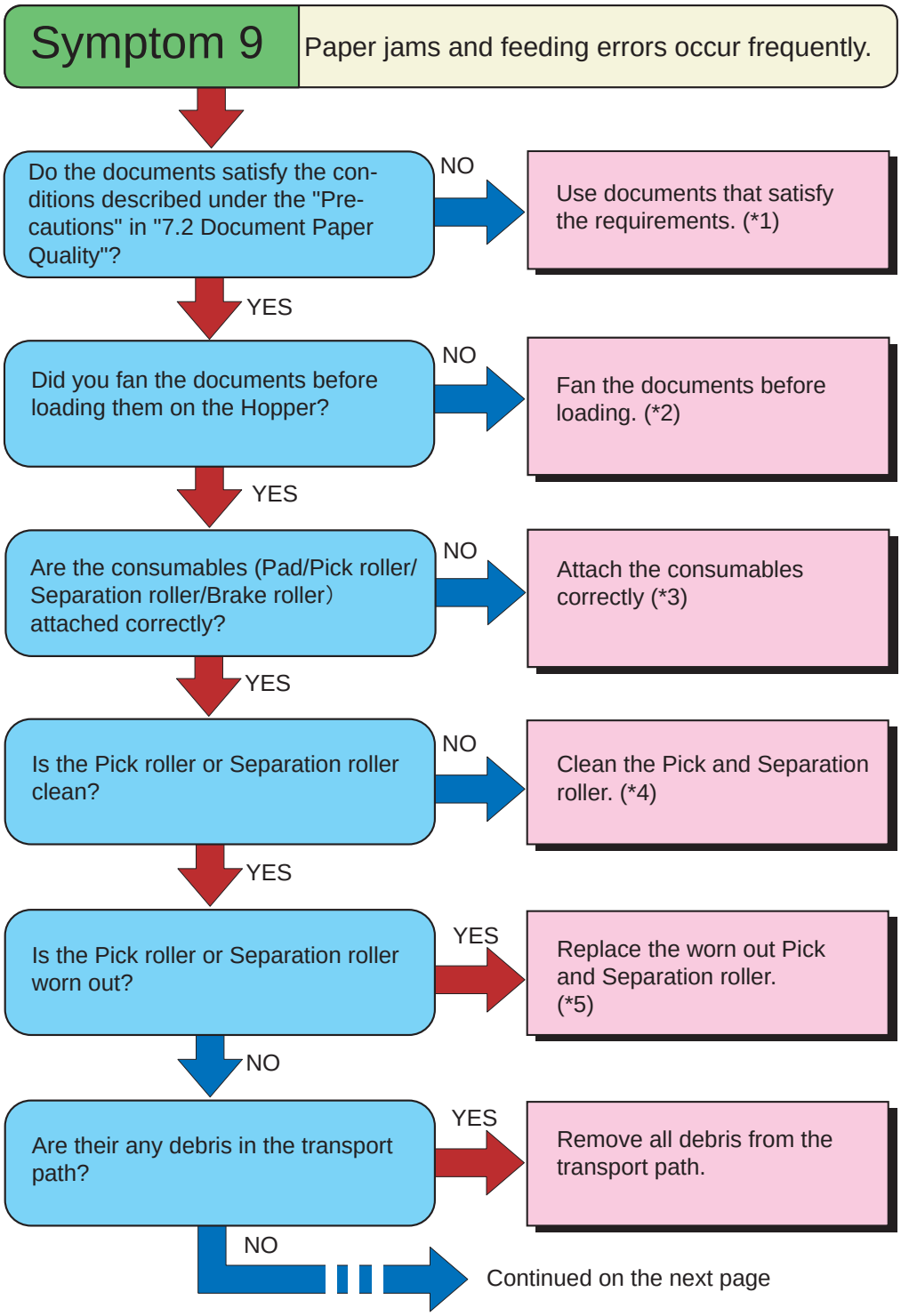
(*2) Refer to “7.5 Multifeed Detection Conditions” on page 158.

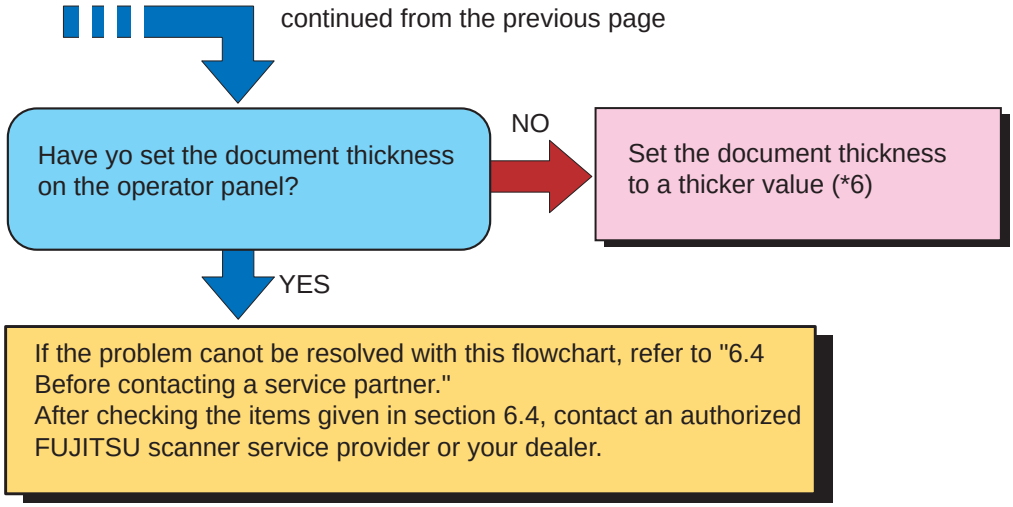
(*3) Refer to “2.6 Loading Documents on the Hopper” on page 17.

(*4) Refer to "4 DAILY CARE" on page 99

(*5) Refer to “5 REPLACEMENT OF CONSUMABLES” on page 115.

(*6) Refer to “2.9 Setting the Paper Thickness” on page 29.


Symptom 9
Paper jams and feeding errors occur frequently.
Do the documents satisfy the conditions described under the "Precautions" in "7.2 Document Paper Quality"?
NO
Use documents that satisfy the requirements. (*1)
YES
Did you fan the documents before loading them on the Hopper?
NO
Fan the documents before loading. (*2)
YES
Are the consumables (Pad/Pick roller/Separation roller/Brake roller) attached correctly?
NO
Attach the consumables correctly (*3)
YES
Is the Pick roller or Separation roller clean?
NO
Clean the Pick and Separation roller. (*4)
YES
Is the Pick roller or Separation roller worn out?
YES
Replace the worn out Pick and Separation roller. (*5)
NO
Are their any debris in the transport path?
YES
Remove all debris from the transport path.
NO
Continued on the next page


continued from the previous page
Have yo set the document thickness on the operator panel?
NO
Set the document thickness to a thicker value (*6)
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*1) Refer to “7.2 Document Quality” on page 153.

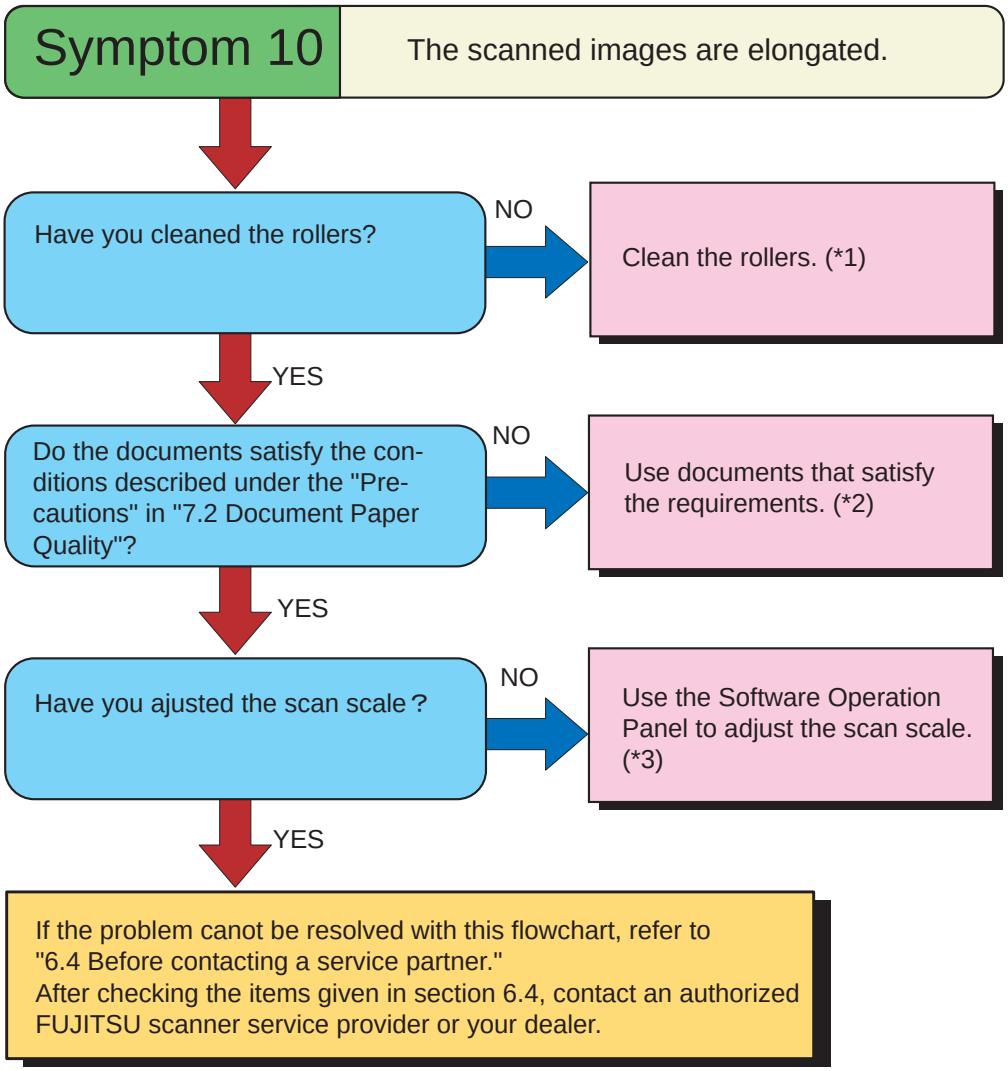
(*2) Refer to “2.6 Loading Documents on the Hopper” on page 17

(*3) Refer to “5 REPLACEMENT OF CONSUMABLES” on page 115.

(*4) Refer to "4 DAILY CARE" on page 99.

(*5) Refer to “5 REPLACEMENT OF CONSUMABLES” on page 115.

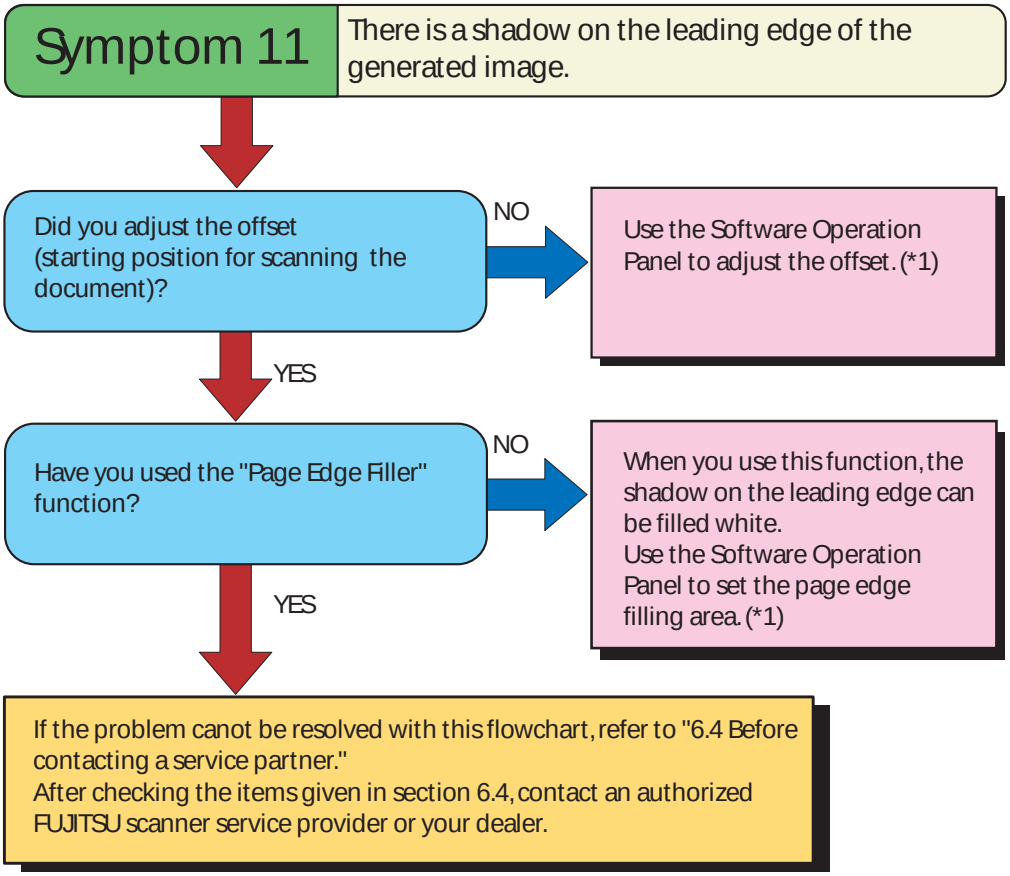
(*6) Refer to “2.9 Setting the Paper Thickness” on page 29.


Symptom 10
The scanned images are elongated.
Have you cleaned the rollers?
NO
Clean the rollers. (*1)
YES
Do the documents satisfy the conditions described under the "Precautions" in "7.2 Document Paper Quality"?
NO
Use documents that satisfy the requirements. (*2)
YES
Have you ajusted the scan scale ?
NO
Use the Software Operation Panel to adjust the scan scale. (*3)
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner."
After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*1) Refer to "4 DAILY CARE" on page 99.

(*2) Refer to “7.2 Document Quality” on page 153.

(*3) Refer to “8 SCANNER SETTINGS” on page 165.


Symptom 11
There is a shadow on the leading edge of the generated image.
Did you adjust the offset (starting position for scanning the document)?
NO
Use the Software Operation Panel to adjust the offset. (*1)
YES
Have you used the "Page Edge Filler" function?
NO
When you use this function, the shadow on the leading edge can be filled white. Use the Software Operation Panel to set the page edge filling area. (*1)
YES
If the problem canot be resolved with this flowchart, refer to "6.4 Before contacting a service partner." After checking the items given in section 6.4, contact an authorized FUJITSU scanner service provider or your dealer.

(*1) Refer to “8 SCANNER SETTINGS” on page 165.

6.4 Before Contacting a Service Provider

Check the following items before contacting an authorized FUJITSU Scanner service provider or the dealer where you bought the scanner.

■ General descriptions

Items to check	Information
Model	example: fi-5900C Check the labels on the scanner for the model name. Refer to "6.5 Labels on the Scanner" on page 150.
Serial Number	example: 000001 Check the labels on the scanner for the Serial Number. Refer to "6.5 Labels on the Scanner" on page 150.
Manufacturing date	example 2005-08 (August 2005) Check the labels on the scanner for the manufacturing date. Refer to "6.5 Labels on the Scanner" on page 150.
Date of purchase	
Symptom	
Frequency of trouble	

■ Error Descriptions

■ Problem at the time of PC connection.

Items to check	Findings
OS (Windows) type	
Displayed error message	
Interface	(example) SCSI interface
Interface controller	(example) Adaptec SCSI Card 2940Au

■ Document feeding trouble

Items to check	Findings
Document type	
Main purpose of use	
Last cleaning date	
Last consumable replacement date	
Operator panel status at trouble	

■ Imaging quality trouble

Items to check	Findings
Type and version of scanner driver	
Interface controller	(example) Adaptec SCSI Card 2940Au
OS (Windows) type	
Application software	(example) ScanAll21, Acrobat

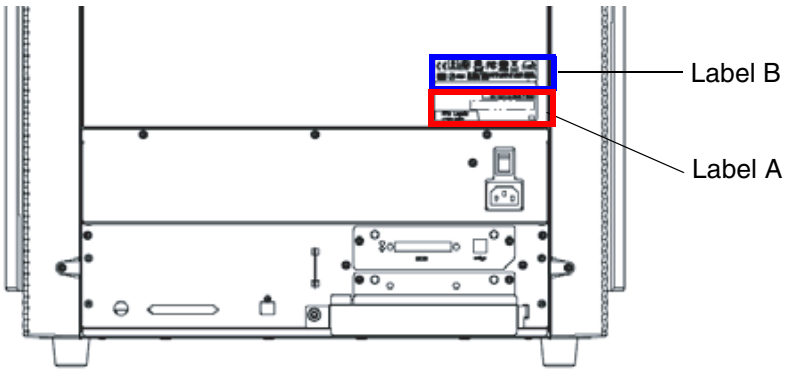
■ Others

Items to check	Findings
Can you send both the original document and the generated image by E-mail or fax?	

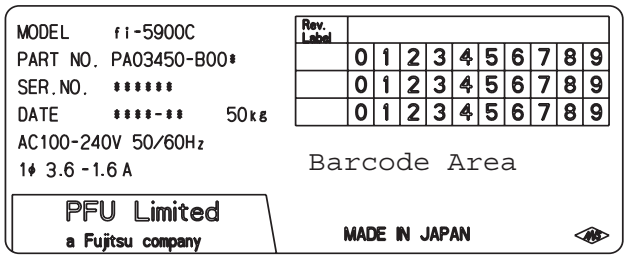
6.5 Labels on the Scanner

This section describes how to check the labels on the scanner.

The following shows where the two labels are located on the scanner.



Label A (example): Indicates scanner information.


MODEL fi-5900C
PART NO. PA03450-B00*
SER.NO. ******
DATE ****-** 50kg
AC100-240V 50/60Hz
1φ 3.6 -1.6 A
PFU Limited
a Fujitsu company
Rev. Label
0 1 2 3 4 5 6 7 8 9
0 1 2 3 4 5 6 7 8 9
0 1 2 3 4 5 6 7 8 9
Barcode Area
MADE IN JAPAN

Label B (example): Indicates various standards that the scanner conforms with.

175525
N124
This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

7 DOCUMENT SPECIFICATIONS

This chapter describes the sizes and qualities of documents required for the satisfactory performance of the scanner.

7.1 Document Size.....152

7.2 Document Quality.....153

7.3 Maximum Document Loading Capacity 156

7.4 Hole-punching Prohibited Areas.....157

7.5 Multifeed Detection Conditions.....158

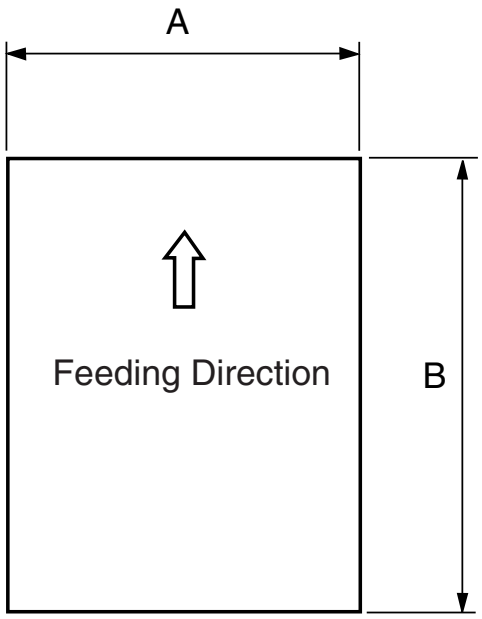
7.6 Background Color Areas 160

7.7 Job Separation Sheet.....161

7.8 Scanning Mixed Documents.....162

7.1 Document Size

The following shows the supported document sizes.



Maximum		Minimum	
A	B	A	B
304.8 mm (12 in)	431.8 mm * (17 in)	53 mm (2.087 in)	74 mm (2.913)

*When scanning in “long page”, the maximum scannable length is 863 mm (34 in).

7.2 Document Quality

This section describes the types and thickness of documents this scanner supports.

■ Document type

The recommended document types are as follows.

- Wood free paper
- Wood containing paper

When using documents of a paper type other than the above, perform a test-scanning with a few sheets of the same type before executing the actual task in order to check whether or not the documents can be scanned.

■ Document thickness

Paper thickness is expressed by “paper weight.” The following shows the paper weights that can be used on this scanner:

31 to 209.3 g/m^2 (For paper sizes equal or bigger than B4 : 52 ~ 157 g/m^2)

■ Precautions

The following documents may not be scanned successfully.

- Document of non-uniform thickness (e.g. envelopes)
- Wrinkled or curled documents (Refer to HINT on the next page)
- Folded or torn documents
- Tracing paper
- Coated paper
- Carbon paper
- Carbonless paper
- Photosensitive paper
- Perforated or punched documents
- Documents that are not square or rectangular
- Very thin documents

Do not use the following documents:

- Paper-clipped or stapled documents
- Documents on which the ink is still wet
- Documents smaller than A8 or larger than A3
- Documents other than paper such as fabric, metal foil, or transparencies

- When scanning semi-transparent documents, set the density to light to avoid a bleed through.
- To prevent the rollers from becoming dirty, avoid scanning documents containing large areas written or filled with pencil. If scanning of such documents is inevitable, clean the rollers more frequently.
- When feeding errors, paper jams and multifeeds occur frequently, refer to "2.9 Setting the Paper Thickness" on page 29

ATTENTION

- Carbonless paper contains chemical substances that may damage the Pad or rollers (e.g. Pick roller) when documents are fed. Pay attention to the following:

  Cleaning:

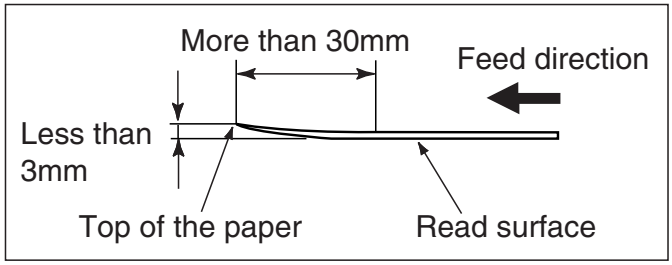
  If pick errors occur frequently, clean the Pad and the Pick roller. For details on cleaning the Pad and the Pick roller, refer to "4 DAILY CARE" on page 99

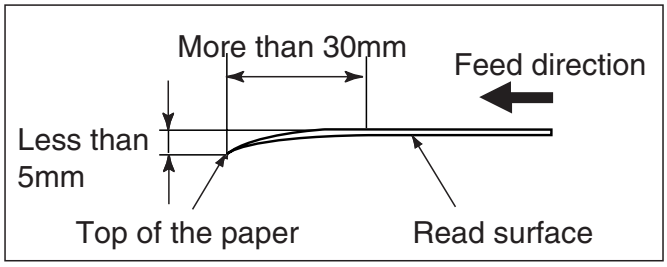
  Replacing parts:

  The service life of the Pad and Pick roller may be shortened compared to the case of scanning wood containing paper documents.
- When scanning wood containing paper, the service life of the Pad and the Pick roller may be shortened compared to the case of scanning woodfree paper.

HINT

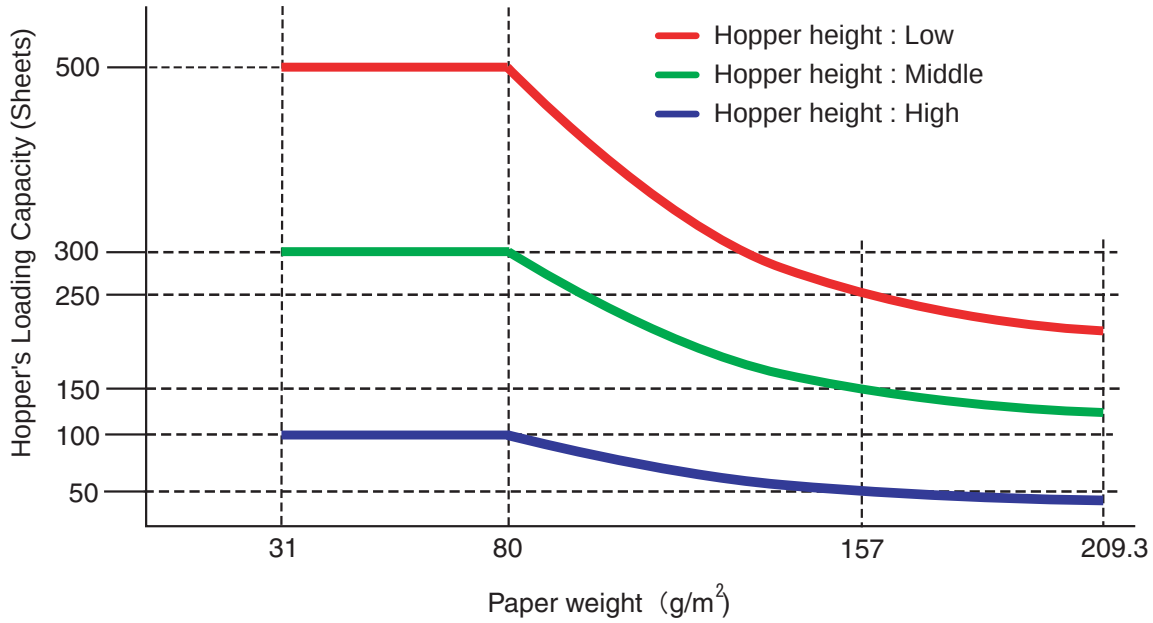
When using the ADF, the leading edge of all document sheets must be evenly aligned. Make sure that curling at the leading edge is within the following tolerances:





7.3 Maximum Document Loading Capacity

The maximum number of sheets that can be loaded on the ADF paper chute is determined by the size and weight of the documents. The following graph shows the maximum document loading capacity of ADF with respect to paper weight.

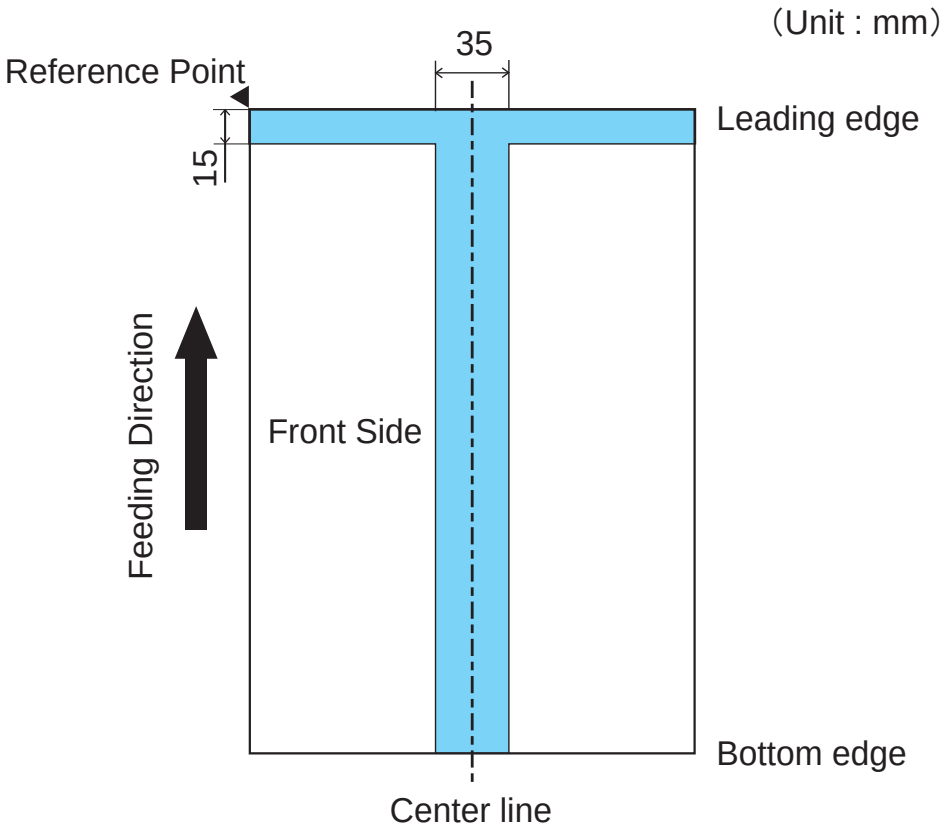


Paper weight conversion table

Unit	Conversion									
g/m^2	31	52	64	75	80	90	104	127	157	209.3
lb	10	14	17	20	21	24	28	34	42	56

7.4 Hole-punching Prohibited Areas

Punched holes in the shaded areas may cause errors.
For job separation sheet requirements, refer to "7.7 Job Separation Sheet" on page 161.



HINT

If there are any holes in the 35mm wide central column, you can set the document a bit to the left or right to avoid detecting error.

7.5 Multifeed Detection Conditions

The following describes the conditions required for Multifeed detection:

■ Check overlapping

- Paper weight: 31 - 209.3 g/m^2 (8.3 to 56.1 lb)
- Punched holes are not allowed within 35 mm (1.4 in) of the vertical lines of the center, right and left sides of the the document as shown in Fig. 1.
- Other paper shall not be glued within 35 mm (1.4 in) of the vertical lines of the center, right and left sides of the the document as shown in Fig. 1.

■ Check length

(Load only documents of the same length onto the hopper.)

- Document length deviation: 1% or less
- Punched holes are not allowed within 35 mm (1.4 in) of the vertical center line of the document as shown in Fig. 2.

■ Check overlapping and length

(Load only documents of the same length and thickness onto the hopper.)

- Paper weight: 31 - 157 g/m^2 (8.3 to 42 lb)
- Document length deviation: 1% or less
- Punched holes are not allowed within 35 mm (1.4 in) of the vertical lines of the center, right and left sides of the the document as shown in Fig. 1.
- Other paper shall not be glued within 35 mm (1.4 in) of the vertical lines of the center, right and left sides of the the document as shown in Fig. 1.

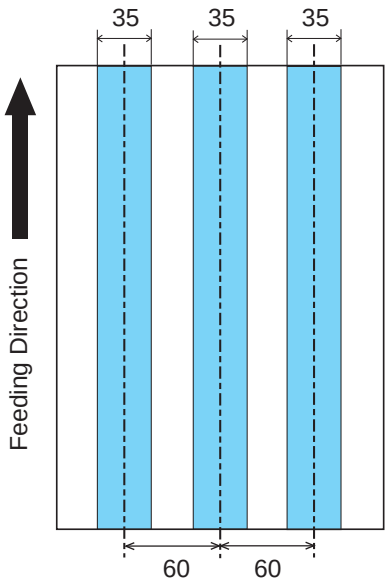
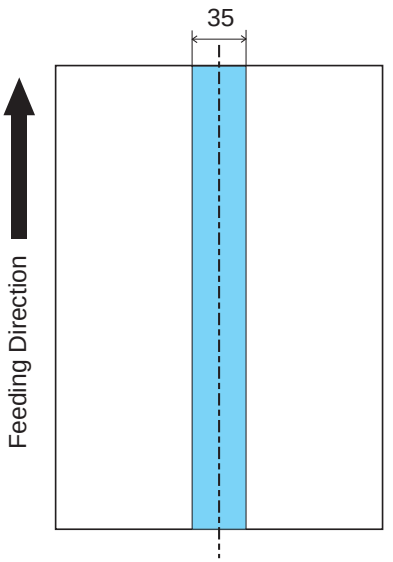


Fig.1



(Unit: mm)

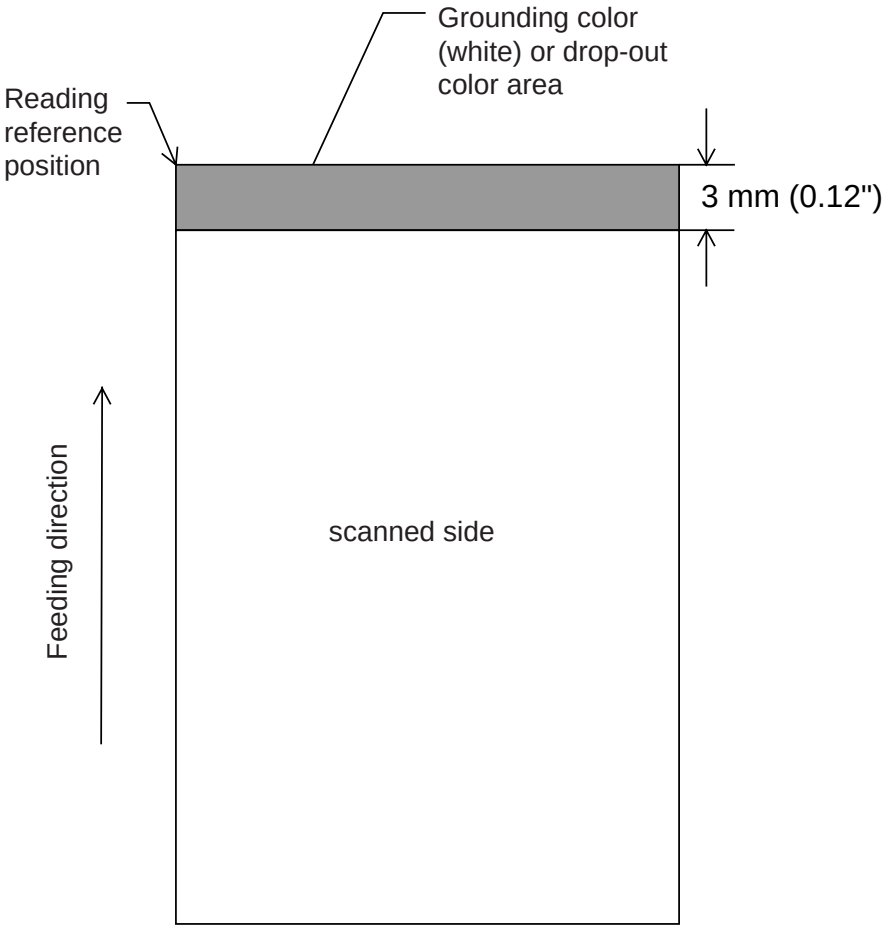
Fig.2

HINT

When you want to detect overlapping, be sure that paper documents are not clinging to each other. Those clinging documents (glued or with static cling) may cause a lower multifeed-detection ratio.

7.6 Background Color Areas

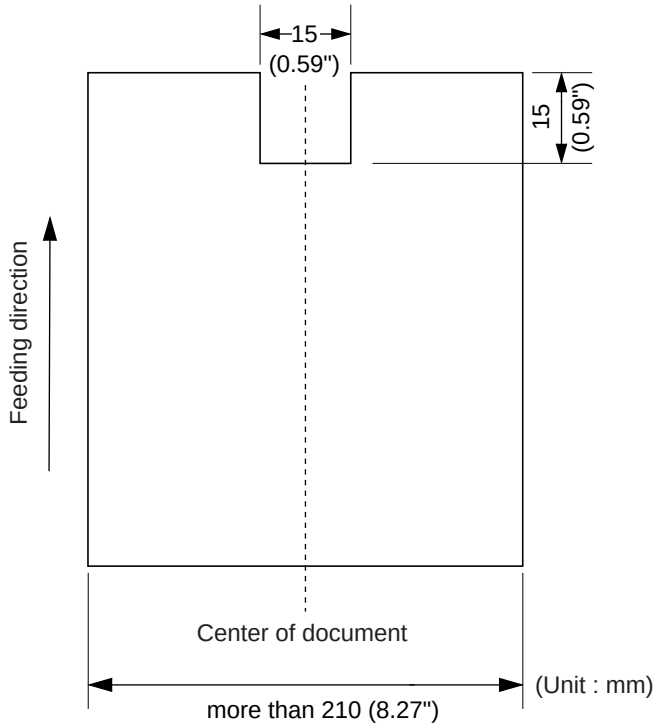
Paper white detection is performed in the shaded area as shown in the Figure below. The top 3mm on both sides of a document, should have no printing in this area.
When using dropout color, the color can be in this area. If this cannot be followed, turn the white level follower off when reading.



7.7 Job Separation Sheet

1. Shape

The following shows the typical format of the job separation sheet.



2. Document Specifications

Document width must be A4 width (210mm/8.27”) or wider.

7.8 Scanning Mixed Documents

When scanning documents of different thickness/Friction Coefficients/sizes using this scanner, the following restrictions apply. Before you scan any mixed documents, always test scan a few pages to see if the mixed document can be properly fed.
(For details on how to scanning mixed documents, refer to "3.3 Scanning Documents with different widths" on page 73.)

■ Types of Documents

It is recommended to align the paper direction (how the fibers are lying in the sheet) with the feeding direction.

■ The Thickness of Documents

The mixed documents' paper weight (thickness) should be in the range below:

31 ~ 209.3g/m^2 (8.3 ~ 56.1lb; 0.038 ~ 0.257mm)

For paper sizes equal or bigger than B4: 52 ~ 157 g/m^2 (14 ~ 42 lb)

■ The Friction Coefficients

Paper of same manufacturer's same brand is recommended. When paper of different manufactuerers/ brands are mixed, the differences of their friction coefficients become very large, which will adversely affecting the feeding performance.
Generally speaking, the friction coefficients of different kinds of paper shall be in the range of 0.35 - 0.60.

■ Document Sizes

Refer to the table below when mixing documents of different sizes.

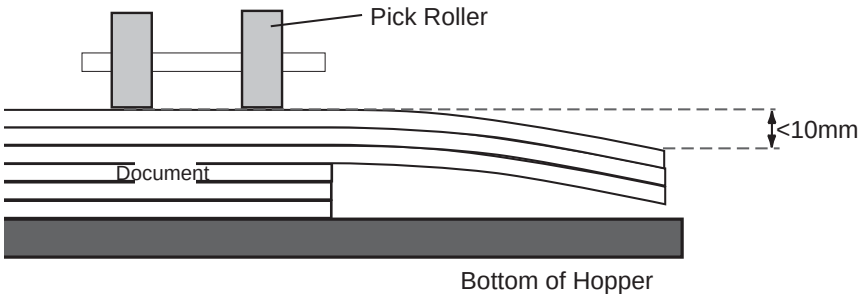
- When scanning mixed size document, because the hopper side guides will not function, the scanned images are easily skewed.
  We recommend you to enable "Automatic Page Size Detection".
- Multifeed Detection by length cannot be used together with "Automatic Page Size Detection".

Maximum Size			A3	DL	B4	LTR	A4	B5	A5	B6	A6	B7	A7	B8	A8
	Width(mm)		297	279	257	216	210	182	149	129	105	91	74.3	64.3	52.5
Minimum size	A3	297	■												
	DL	279	■	■											
	B4	257	■	■	■										
	LTR	216	■	■	■	■									
	A4	210	■	■	■	■	■								
	B5	182	■	■	■	■	■	■							
	A5	149			■	■	■	■	■						
	B6	129				■	Mixing Possible			■					
	A6	105				■	■	■	■	■	■				
	B7	91					■	■	■	■	■	■			
	A7	74.3						■	■	■	■	■	■		
	B8	64.3						■	■	■	■	■	■	■	
	A8	52.5													■

DL: 11 X 17 in., LTR: Letter size.

Because of friction, smaller document under larger document will be moved when the larger document is being picked up, adversely affecting feeding performance.

When setting the document, try to meet the following condition:



8 SCANNER SETTINGS

This chapter explains the how settings can be done for the scanner using the Software Operation Panel.

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8.1 Scanner Settings

The Software Operation Panel will be installed together with the scanner driver (TWAIN/ISIS).
With this application, you can configure settings and functions for the fi-5900C.

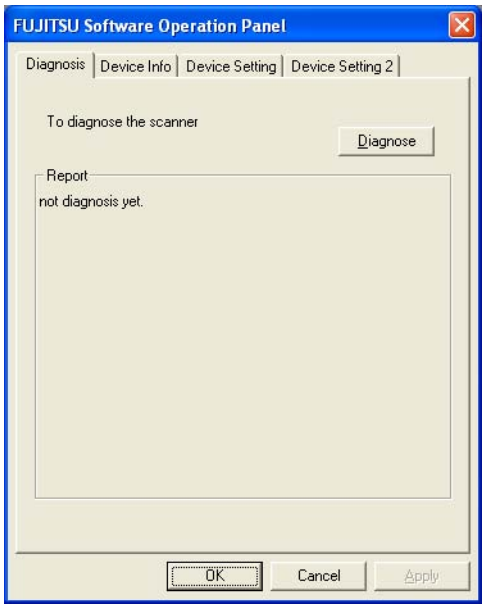
■ Start up the Software Operation Panel

Start up via PC

1. **Confirm if the scanner is connected correctly to the PC, then power on the scanner.**

2. **From the [Start] menu, select [All Programs] - [Scanner Utility for Microsoft Windows] - [Software Operation Panel].**

⇒The [Software Operation Panel] window will be displayed.

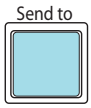


Start up via Scanner

1. **Confirm if the scanner is connected correctly to the PC, then power on the scanner.**

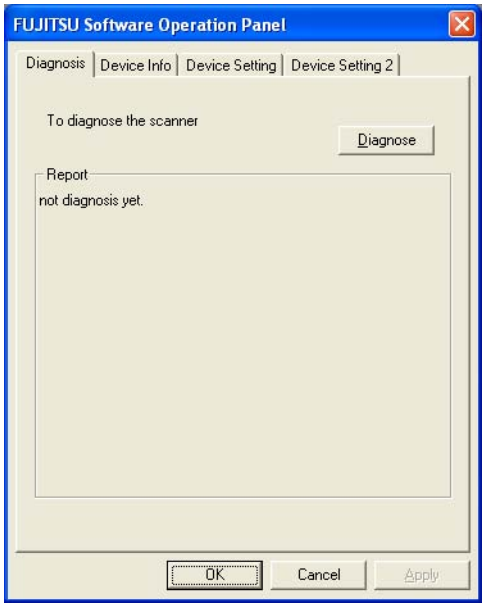
2. **Press the [Function] button on the Operator Panel. The Function Number Display will show .**

   When pressing the [Function] button, the Function Number Display will change in the following way:
   [1]→[2]→...→[9]→[C].

3. **Press the [Send to] 

button.**

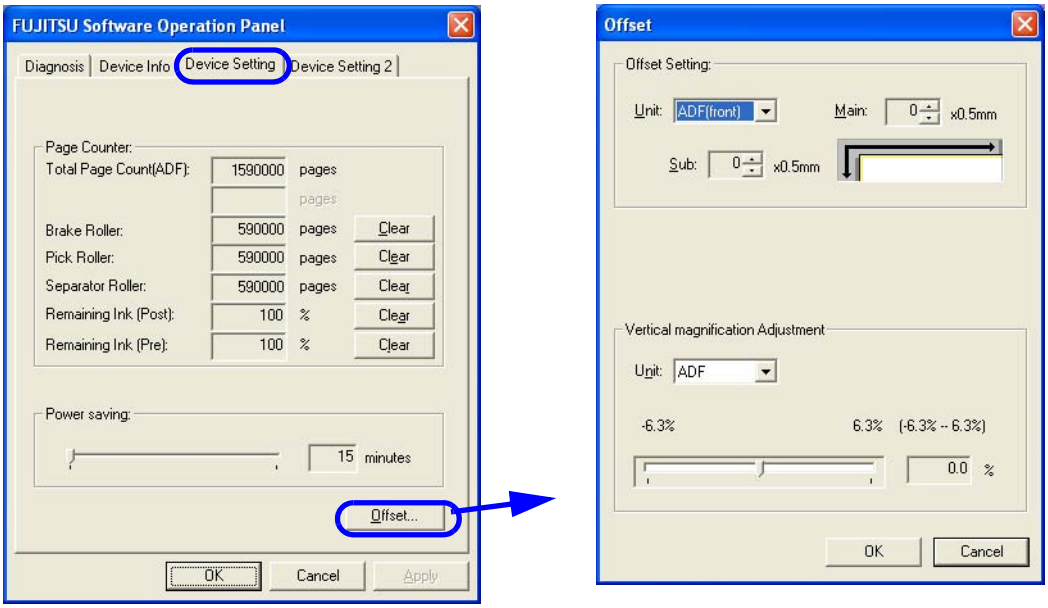
   ⇒The [Software Operation Panel] window will be displayed.



■ Settings

Using the Software Operation Panel, you can configure the following settings for the scanner connected to the PC.

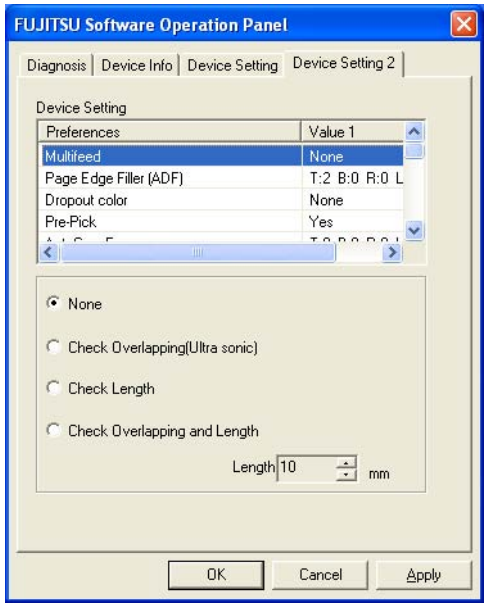
[Device setting]

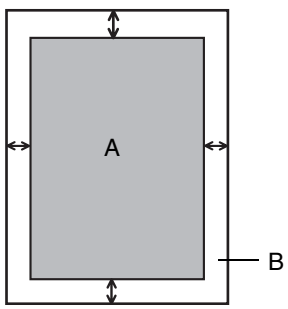


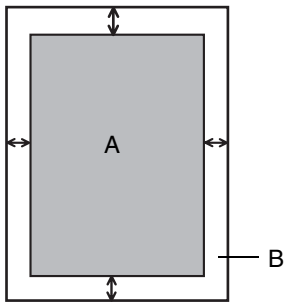
Item	Explanation	Selectable parameter	Default
Page counter (Consumables counter)	For evaluating the consumable replacement cycle. Use this function to reset the counters after replacing consumables. Refer to "5.1 Consumables and Replacement Cycle" on page 116	Pad/Pick roller/Separator Roller/Brake roller remaining ink level (only for the imprinter option)	-
Power saving setting	Select the waiting time before entering the Power saving mode. Refer to "8.2 Power saving setting" on page 172	Setting range 15 to 55 minutes (set in steps of 5 min.)	15 min.
Offset setting	Adjust the start position for the document scanning. Refer to "8.3 Offset/Scan scale" on page 173	Left right: setting range -2 to 3mm (set in 0.5mm steps) Up down: setting range -2 to 3mm (set in steps of 0.5mm)	left right 0mm up down 0mm
Scan scale	Adjust the magnification in the feeding direction. Refer to "8.3 Offset/Scan scale" on page 173	Setting range -6.3% to 6.3% (set in 0.1% steps)	0%

[Device settings 2]

Selecting each item displays detailed settings (parameters) in the lower part.



Item	Explanation	Selectable parameter	Default
Multifeed	Select the method to detect Multifeed. (Check either of overlapping or document length, or both of document length and overlapping) Refer to "8.4 Multifeed Detection" on page 175	Deactivated/Checking for overlapping/Checking difference of length/Checking overlapping and difference in length. Selectable length (to be detected as length difference): 10, 15 or 20mm	Deactivated
Page edge filler (ADF)	Fill the end sections of a specified-mm-wide with white or black on the scanned image. When the backing (background) color is white, the end sections are filed with white; and when the background color is black, filled with black.	Top/left/right: 0-15mm Bottom: -7 to 7mm (can be set in increments of 1mm)  (A: Image area B: Filled area A+B: Area to be output)	Top/Bottom/Left/Right: 0mm
Dropout Color	Drop out a preselected color for the scanned image. (Binary black & white/grayscale mode only)	Red/Green/Blue/None	Green

Page edge filler (Automatic paper size detection)	Fill the end sections of a specified-mm-wide with white when the paper size is automatically detected. The end sections of a specified-mm-wide are filled with white.	Top/Left/Right/Bottom: 0 to 7.5mm (can be set in increments of 0.5mm)  (A: Image area B: Filled area A+B: Area to be output)	Top/Bottom/ Left/Right: 0mm
Document check area specification for Multifeed Detection	Specify the area to be detected for multifeed. You can select left, middle, or right for detection. Refer to "8.4 Multifeed Detection" on page 175.	Left/Middle/Right	Left
- Modes of selection	Specify which area to check for multifeed: The area for which multifeed detection is enabled or the area for which multifeed detection is disabled. Refer to "8.4 Multifeed Detection" on page 175.	Non-detection area/Detection area	
- Specify area	Specify the range where multifeed detection is enabled/disabled. Refer to "8.4 Multifeed Detection" on page 175.	Start: 0 - 550mm End: 0 - 550mm	Start/End: 0mm
Thin Paper Mode	To scan thin paper documents, enable this mode.	Disable/enable	Disable
Paper Jam Detection	Specify the degree of jam detection at the feeder.	Normal/Sensitivity low	Sensitivity-Low
AutoCrop Boundary	Select Round Up or Round Down: The fractional figures can be rounded up or down when the paper size is automatically detected.	Round Up/Round Down	Round Down
SCSI Bus Width	Specify the data transfer width for SCSI connection.	16-bit (wide)/8-bit	16-bit
Auto Color Detection	Specify the slice level for automatically detecting Color/Monochrome	0 to 255 (steps)	5
Prepick	To give a higher priority to processing speed, select [Yes], if not, select [No].	Yes/No	Yes

Alarm setting	For the beeper to sound the alarm of a paper jam or multifeed, select Alarm at error.	Alarm at error/No alarm at error	No alarm at error
Jam detection outside of scannable area when transporting...	By selecting “On”, such a case in which the document is fed outside the scannable area due to abnormal skew can be judged as a paper jam.	On/Off	
Imprinter Selection	Select the Pre-imprinter option or the Post-imprinter option if you have installed the options (to be purchased separately).	Normal (obey Host specification)/ Forcibly select Pre-imprinter/Forcibly select Post-imprinter	Normal
Timeout for manual feeding	Specify the standby time period. After the predetermined time period has elapsed, manual feeding mode is canceled.	5, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110 (seconds)	10 seconds

8.2 Power saving setting

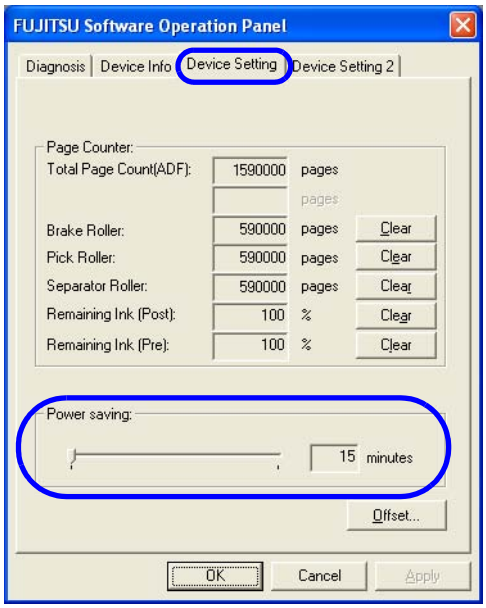
When not using this scanner for a certain time, it will enter automatically the power saving mode.

Configure the Power saving mode as follows:

1. **Start up the Software Operation Panel.**

   Refer to “8.1 Scanner Settings” on page 166.

2. **Select the [Device Setting] tab.**



3. **Use the slide control bar to set the waiting time before entering the power saving mode.**

   Setting range 5 - 60 minutes. (Set in steps of 5 minutes)

8.3 Offset/Scan scale

When the position of the scanned image is not correct or the image is elongated, use the following procedure to adjust the Offset and the Scan scale for correction.

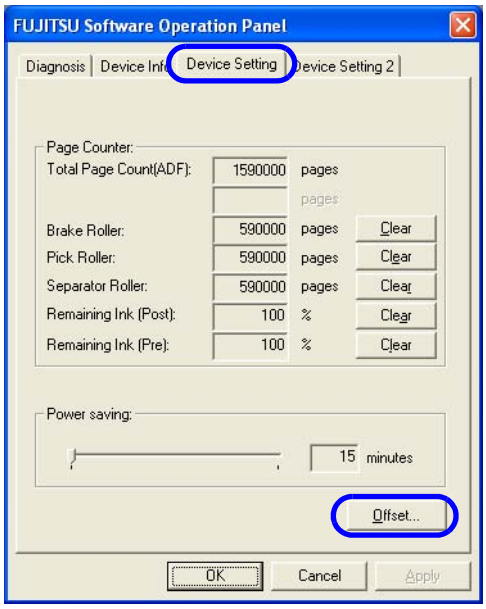
ATTENTION

The factory default setting are appropriate, so normally there is no need to make any adjustment.

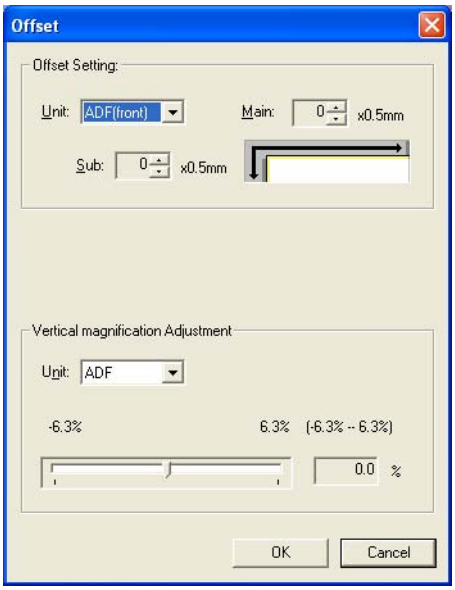
1. Start up the Software Operation Panel.

Refer to "8.1 Scanner Settings" on page 166.

2. Click the [Offset] button on the [Device setting] tab.



3. Adjust the Offset/Scan scale as necessary.



Offset setting

Target:	Select ADF front or ADF back as target.
Horizontal:	Adjusts the horizontal Offset. Setting range -2mm to +3mm, in steps of 0.5mm.
Vertical:	Adjusts the vertical Offset. Setting range -2mm to +3mm, in steps of 0.5mm.

Scan scale setting

Target:	Select ADF front or ADF back as target.
Vertical:	Adjusts the vertical (document length) Scan scale. Setting range -6.3% to +6.3%, in steps of 0.1%.

8.4 Multifeed Detection

Multifeed refers to the phenomenon, when two or more documents are fed overlapping at once into the scanner.
This may cause the loss of important data.

To prevent this, this scanner is equipped with a Multifeed detection function.

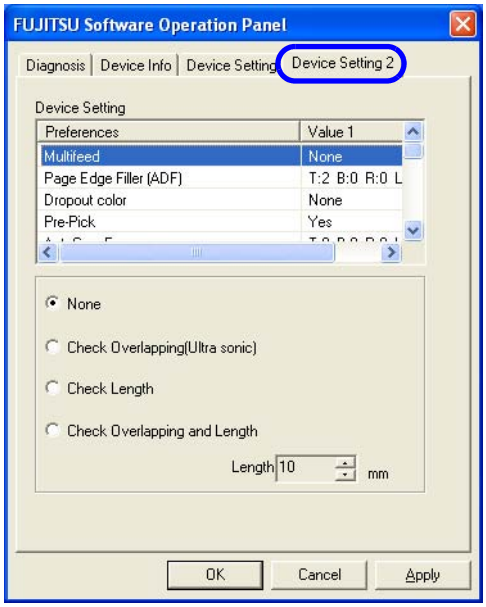
When function is activated, a message will be displayed and the scanning interrupted in case a Multifeed has been detected.

Configure the settings for the Multifeed detection as follows.

1. Start up the Software Operation Panel.

Refer to "8.1 Scanner Settings" on page 166.

2. From the [Device Setting 2] tab select "Multifeed".



3. Select the detection method.

Deactivated:	No Multifeed detection will be performed.
Check overlapping:	Document overlapping will be monitored.
Check length difference:	The difference of the documents length will be monitored.
Check overlapping and length difference:	[Check overlapping] and [Check length difference], both parameters will be used for monitoring the fed documents.
Length:	When checking the document length, select the length difference for which a Multifeed will be detected. Select 10/15/20mm. If the detected document length is smaller than the selected size, it will be recognized as a Multifeed.

ATTENTION

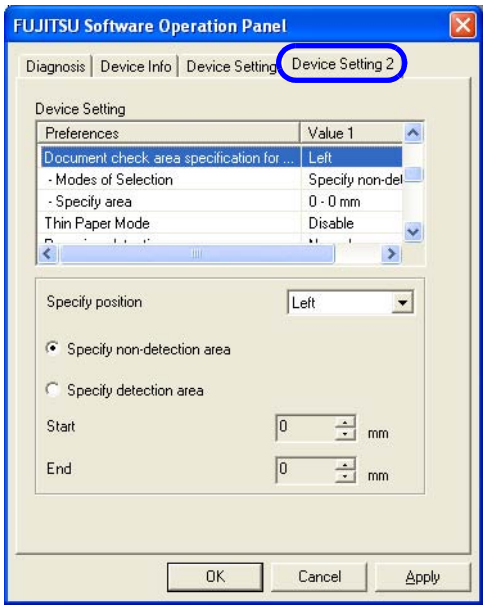
- When scanning documents of different length together in the same stack, select [Checking overlapping].
- If something is glued to the documents (stamps, memo or photos), they will be recognized as Multifeed when using [Checking overlapping]. When scanning such documents, use [Checking length difference] instead.
  However, when using the [detection area/none-detection area] function, you can also use [Checking overlapping].
- The setting can be done as well on the scanner driver configuration window.
  (In this case, the scanner driver selection will have priority)

When [Check overlapping] is selected as the detection method, you can also specify the detection area.

1. **Start up the Software Operation Panel.**

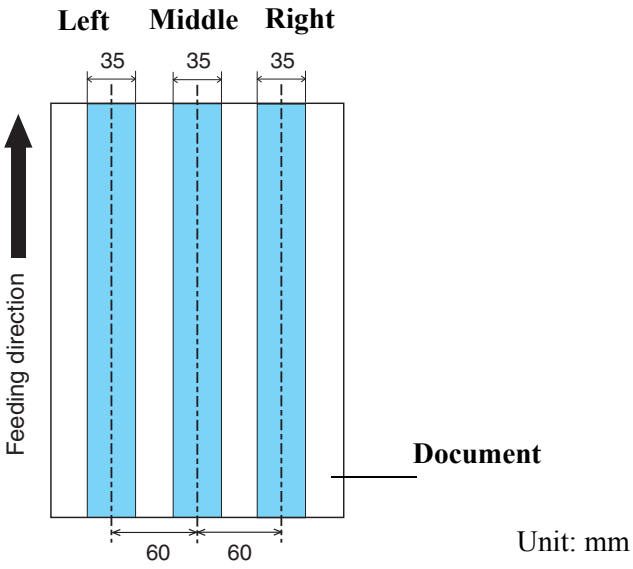
   Refer to "8.1 Scanner Settings" on page 166.

2. **Select the "Document check area specification for Multifeed Detection" setting on the [Device Setting 2] tab.**



3. Speficy the detection area.

Specified area: Specify the area to be detected. Select left, middle, or right.



Selected mode: You can specify the mode to detect or not to detect the specified area for multifeed.

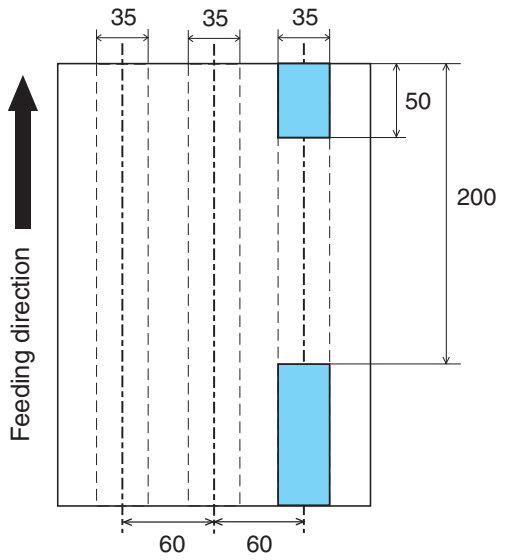
Specify non-detection area: The specified area is not detected.

Specify detection area: The specified area is detected.

Start: You can specify the starting position of the selected range by the length from the edge of the paper document.
Range: 0 to 510mm, in increments of 2mm, Start position<End position

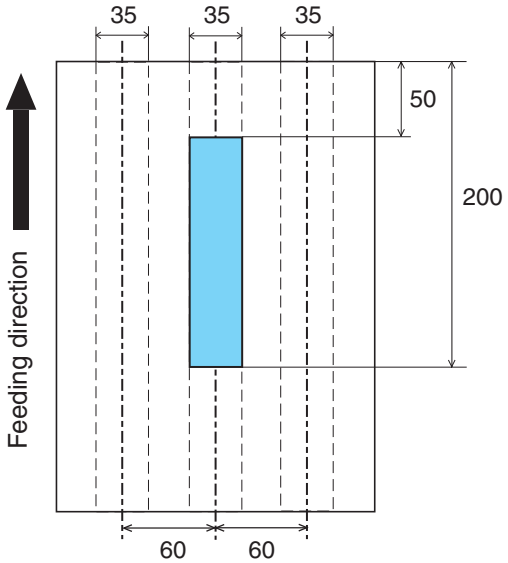
End: You can specify the ending position of the selected range by the length from the edge of the paper document.
Range: 0 to 510mm, in increments of 2mm, Start position<End position

Setting Example 1:
Specified area = Right, Selected mode = Non-detection area, Start = 50mm, End = 200mm



Unit: mm

Setting Example 2:
Specified area = Middle, Selected mode = Detection area, Start = 50mm, End = 200mm



Unit: mm

HINT

When you want to detect overlapping, be sure that paper documents are not clinging to each other. Those clinging documents (glued or with static cling) may cause a lower multifeed-detection ratio.

8.5 Page Edge Filler (ADF)

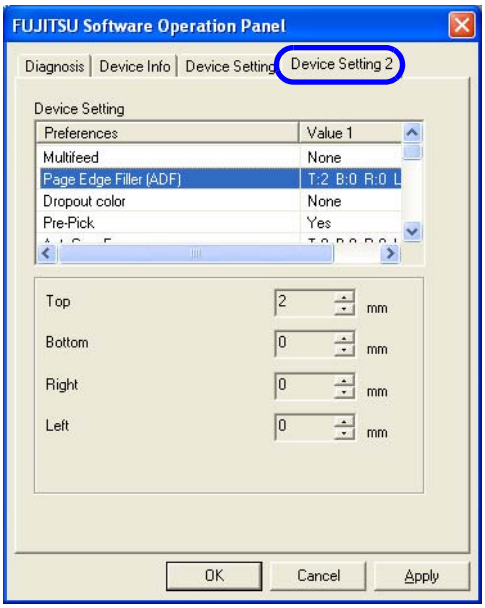
Depending on the state of the documents, the shadow of the scanned document appears in the end portion of the output image and black thin lines may be generated.
If this is the case, you can improve the output image by using the “Page Edge Filler” function. This function fills the end portion of the image so that it looks clean.

Configure the settings for the Page Edge Filler as follows:

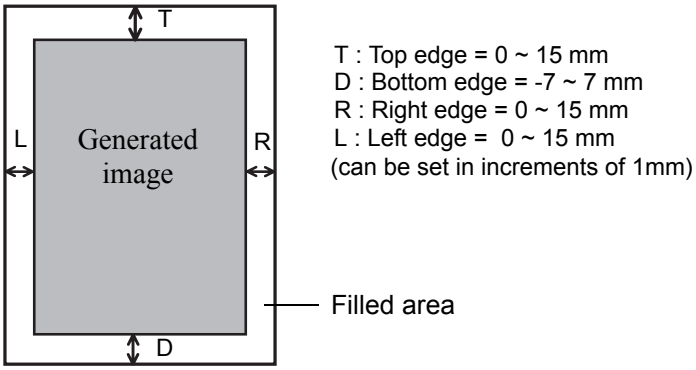
1. Start up the Software Operation Panel.

Refer to “8.1 Scanner Settings” on page 166.

2. Select the “Page Edge Filler (ADF)” setting on the [Device Setting 2] tab.



3. Specify the length for each end section; top, bottom, right, and left, to fill the end sections.



T : Top edge = 0 ~ 15 mm
D : Bottom edge = -7 ~ 7 mm
R : Right edge = 0 ~ 15 mm
L : Left edge = 0 ~ 15 mm
(can be set in increments of 1mm)

The specified areas are filled with white when the backing (background) is white, and with black when the backing is black.

Unless otherwise specified, the background color is white. You can also change it to the “Black background” using the scanner driver.
If you are using the TWAIN driver, do the following to change the background color to black: Select the [Option] button, and then select [Black background] from [Automatic Size and Skew detection] on the [Rotation] tab.

Note that if the Page Edge Filler is too wide, some characters in the vicinity of the boundary may be cut out.
When “Automatic paper size detection” is set, “Page Edge Filler (Automatic paper size detection)” automatically becomes valid instead of this setting.

8.6 Dropout Color

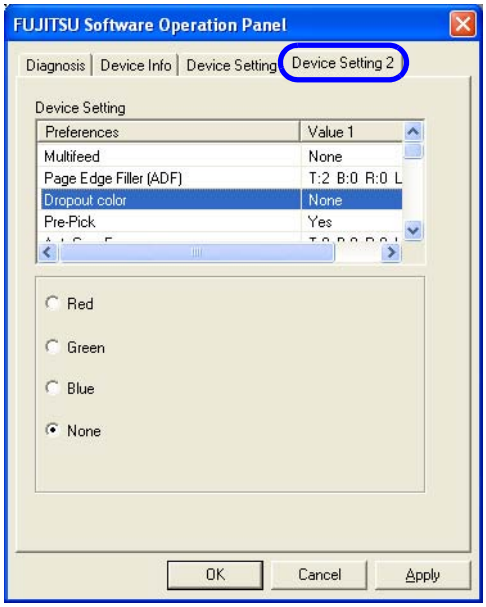
By using the “Dropout Color” function, you can scan documents with the specified color removed from the light’s three primary colors, or red, green, blue.
(This function is available for the binary black and white setting as well as the grayscale setting.)
For example, you can scan only the black part of letters when scanning the document containing black letters each with a green frame.

Configure the settings for the Dropout Color as follows:

1. Start up the Software Operation Panel.

Refer to “8.1 Scanner Settings” on page 166.

2. Select the “Dropout Color” setting on the [Device Setting 2] tab.



3. Select a color to drop out.

Red, Green, Blue: Red, green, or blue is dropped out.
None: No dropout occurs.

ATTENTION

The Dropout Color setting can also be configured using the scanner driver setting window. (The scanner driver setting window is given a priority over Software Operation Panel.)
When configuring the setting through Software Operation Panel, you cannot select other colors than red, green, and blue. If you want to drop out any other colors, use the scanner driver setting window.
For details on how to configure settings through the scanner driver setting window, refer to “3.5 Excluding a Color from the image (drop out color)” on page 82

8.7 Pre-Pick

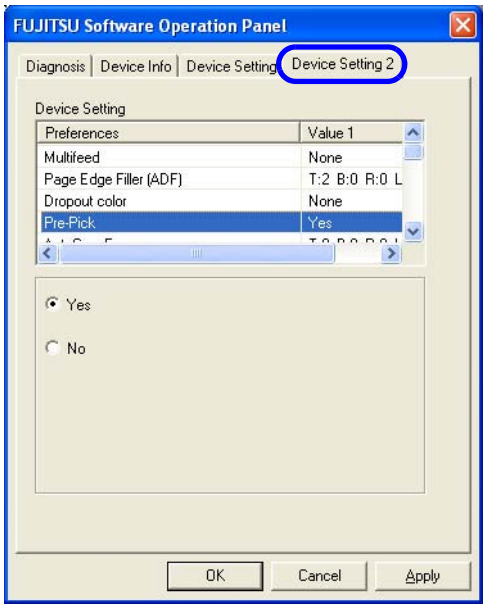
To scan documents consecutively, you can previously pick the document to be scanned next. This operation is called Pre-Pick.
By enabling Pre-Pick, the time interval between the scanning of two separate documents can be shortened.

Configure the settings for the Pre-Pick as follows:

1. Start up the Software Operation Panel.

Refer to “8.1 Scanner Settings” on page 166.

2. Select the “Pre-Pick” setting on the [Device Setting 2] tab.



3. Select “Yes” or “No” for Pre-Pick.

Select “Yes” to make Pre-pick valid, and select “No” to make it invalid.

HINT

By enabling Pre-Pick, faster scanning can be achieved.
While Pre-Pick is valid, if you cancel scanning in process, you have to reload the document after ejecting all the pre-picked document.

8.8 Page Edge Filler (Automatic paper size detection)

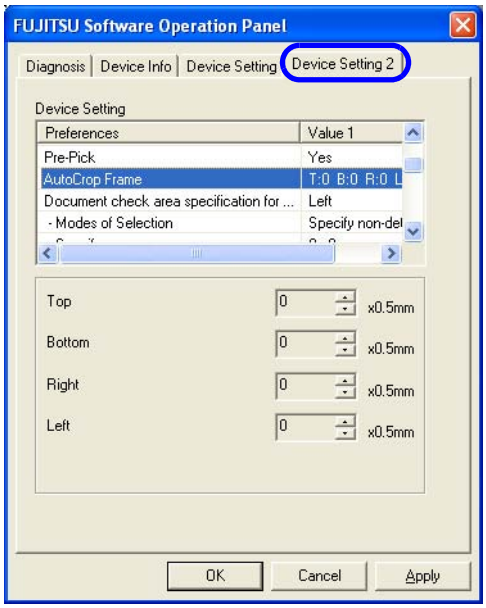
When the scanner is set to detect paper size automatically, depending on the state of the documents, the black frame may be generated on the output image.
If this is the case, you can improve the output image by using the “Page Edge Filler (Automatic paper size detection)” function. This function fills the end portion of the image with white so that it looks clean.

Configure the settings for “Page Edge Filler (Automatic paper size detection)” as follows:

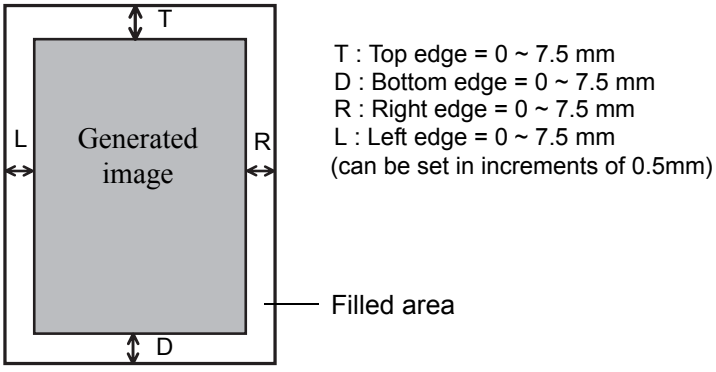
1. **Start up the Software Operation Panel.**

   Refer to “8.1 Scanner Settings” on page 166.

2. **Select the “Page Edge Filler (Automatic paper size detection)” setting on the [Device Setting 2] tab.**



3. **Specify the Top, Bottom, Right, and Left widths to fill.**



T : Top edge = 0 ~ 7.5 mm
D : Bottom edge = 0 ~ 7.5 mm
R : Right edge = 0 ~ 7.5 mm
L : Left edge = 0 ~ 7.5 mm
(can be set in increments of 0.5mm)

The specified range is filled with white.

The “Automatic Paper Size Detection” setting can be configured on the scanner driver setting window.
For details on how to set the setting, refer to “3.8 Correcting skewed Documents” on page 90

Note that if the Page Edge Filler is too wide, some characters in the vicinity of the boundary may be cut.
When you scan the document based on the other settings than “Automatic paper size detection”, “Paper Edge Filler (ADF)” automatically becomes valid instead of this setting.

8.9 Thin Paper Mode

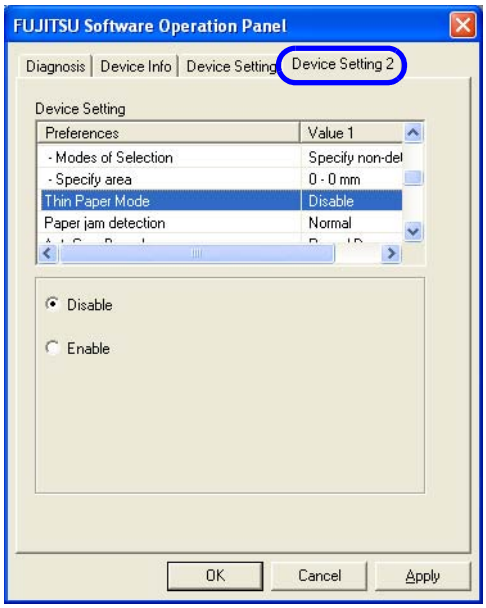
If nonstandard thin paper cannot be fed and scanned smoothly, use this mode.
In this mode, sheets of paper are fed at a slower speed so that thin paper can be fed and scanned properly.

Follow the steps below to switch to the Thin Mode.

1. **Start up the Software Operation Panel.**

   Refer to "8.1 Scanner Settings" on page 166.

2. **Select the "Thin Paper Mode" setting on the [Device Setting 2] tab.**



3. **To switch to Thin Paper Mode, select "Enable".**

ATTENTION

In Thin Paper Mode, the document is scanned at a lower speed, and thus it takes longer.
This mode should be used only for thin paper. Set the setting to "No" while you use paper of standard thickness.
About the paper thickness, refer to "7.2 Document Quality" on page 153.

8.10 Paper Jam Detection

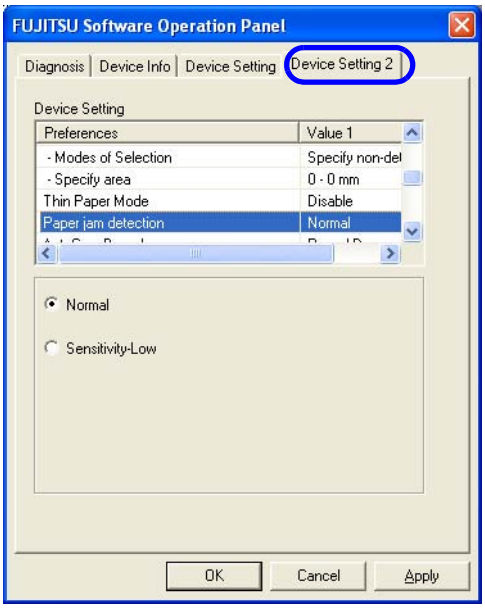
You can set the degree of detection sensitivity for a jam at the feeder.

Configure the settings for Paper Jam Detection as follows:

1. **Start up the Software Operation Panel.**

   Refer to “8.1 Scanner Settings” on page 166.

2. **Select the “Paper jam detection” setting on the [Device Setting 2] tab.**



3. **Set the degree of detection sensitivity for a jam occurred at the feeder.**

   If you encounter frequent jams, set the setting to “Sensitivity-Low”.

ATTENTION

Setting to “Sensitivity-Low” reduces the detection accuracy for a paper jam.
If you don’t want to get your important document ripped or crumpled, be sure to set the setting to “Normal” to scan the document.

8.11 AutoCrop Boundary

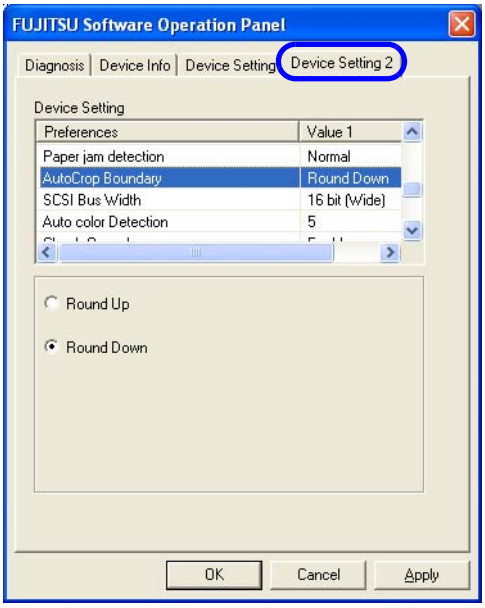
When the scanner is set to detect a paper size automatically, the detected paper size may not be the integer number. You can round the number including fractions up or down.

Configure the settings for the AutoCrop Boundary as follows:

1. **Start up the Software Operation Panel.**

   Refer to "8.1 Scanner Settings" on page 166.

2. **Select the "AutoCrop Boundary" setting on the [Device Setting 2] tab.**



3. **Select "Round Up" if you want to prevent the output image from chipping, and select 'Round Down" if you want to delete unnecessary details.**

ATTENTION

- When the document is scanned with "Round Down" selected, the characters in the vicinity of the rear end of the document, if any, may be cut out.
- Selecting "Round Up" can prevent data from chipping, but it may generate black lines near the rear end.
- For details on how to set the Automatic Paper Size Detection setting, refer to "3.8 Correcting skewed Documents" on page 90.

8.12 SCSI Bus Width

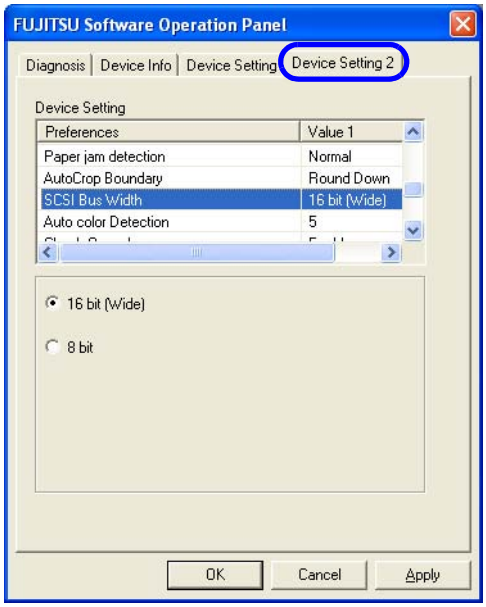
When using the SCSI-connected scanner, you can select a data transfer width.

Configure the settings for the SCSI Bus Width as follows:

1. **Start up the Software Operation Panel.**

   Refer to “8.1 Scanner Settings” on page 166.

2. **Select the “SCSI Bus Width” setting on the [Device Setting 2] tab.**



3. **Select either 16-bit or 8-bit.**

ATTENTION

To use SCSI cards and/or SCSI cables that do not support Ultra Wide SCSI, select “8-bit”.

8.13 Auto Color Detection

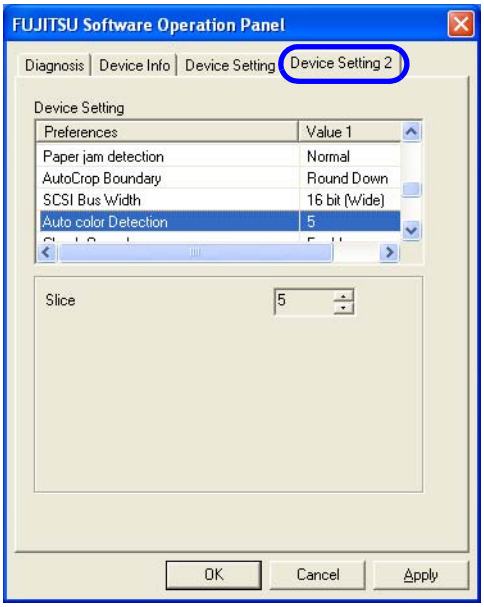
You can adjust the slice level for auto color detection.

Configure the settings for the Auto Color Detection as follows:

1. Start up the Software Operation Panel.

Refer to "8.1 Scanner Settings" on page 166.

2. Select the "Auto Color Detection" setting on the [Device Setting 2] tab.



3. Select the Slice value.

You can select the Slice value from 0 to 255 (256 levels).
In the case that black and white documents are judged as color documents, select larger values.
In the case that color documents are judged as black and white, select smaller values.

HINT

The auto color detection setting can be configured on the scanner driver setting window.
For details on how to set the setting, refer to "3.10 Color/monochrome Auto Detection" on page 95.

8.14 Alarm Setting

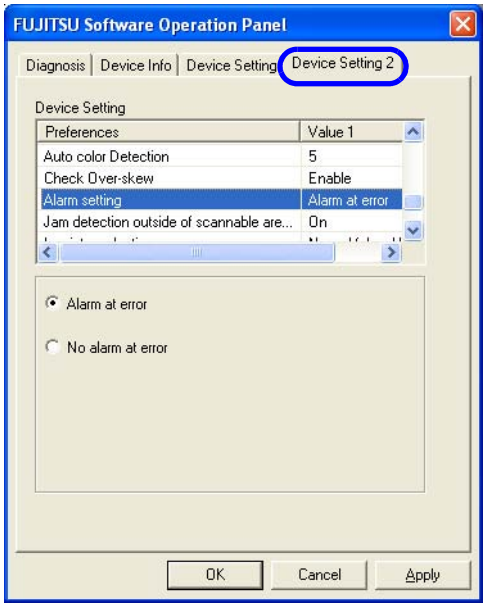
You can make the alarm to sound beeps when a jam or multifeed occurs, as well as disabling the alarm.

Configure the settings for the Alarm setting as follows:

1. **Start up the Software Operation Panel.**

   Refer to “8.1 Scanner Settings” on page 166.

2. **Select the “Alarm setting” on the [Device Setting 2] tab.**



3. **Select “Alarm at error” to sound beeps when a jam or multifeed occurs. Select “No alarm at error” to disable the alarm.**

8.15 Jam Detection Outside of Scannable Area When Transporting...

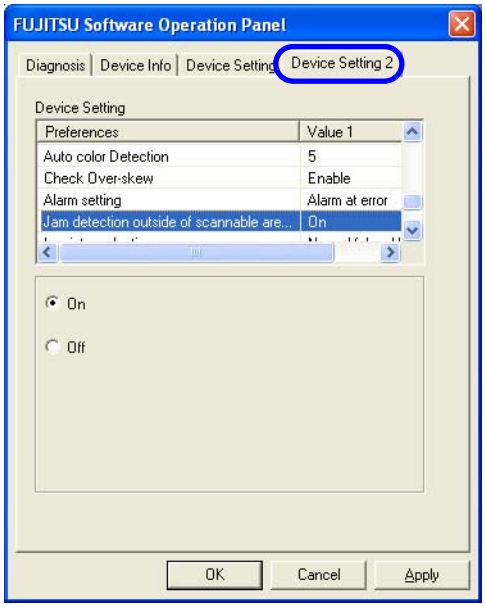
If this function is turned On, such a case, in which the documents are fed outside of the scannable area due to over-skew, is judged as a jam. You can turn it On and Off.

Configure the settings for the Jam detection outside of scannable area when transporting... as follows:

1. **Start up the Software Operation Panel.**

   Refer to "8.1 Scanner Settings" on page 166.

2. **Select the "Jam detection outside of scannable area when transporting..." setting on the [Device Setting 2] tab.**



3. **Select "On" to judge such a scan as a jam, and select "Off" not to judge it as a jam.**

8.16 Imprinter Selection

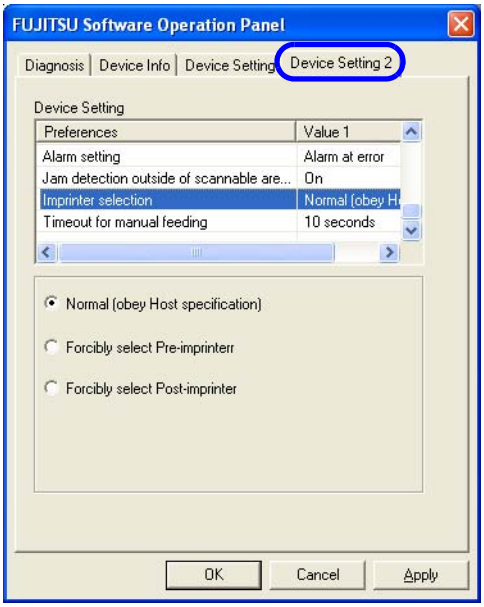
You can specify which imprinter to use; Pre-imprinter or Post-imprinter, if you already have installed these options.

Configure the settings for the Imprinter Selection as follows:

1. Start up the Software Operation Panel.

Refer to “8.1 Scanner Settings” on page 166.

2. Select the “Imprinter Selection” setting on the [Device Setting 2] tab.



3. Select the Imprinter to use.

Normal (obey Host specification):	Complies with the scanner driver setting.
Forcibly select Pre-imprinter:	Pre-imprinter is forcibly used to print unless directed by the scanner driver.
Forcibly select Post-imprinter:	Post-imprinter is forcibly used to print unless directed by the scanner driver.

HINT

For details on the specifications of the imprinter, refer to “9 OPTIONS” on page 195.

8.17 Timeout for Manual Feeding

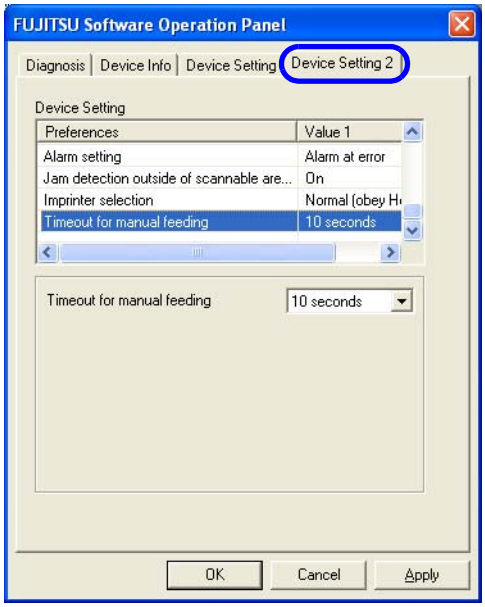
In manual feeding mode, if the scanner is left without loading the next document to scan for an extended time period, the scanner completes the scanning once and cancel the manual feeding mode. The time period is called “timeout”.

Configure the settings for the Timeout for Manual as follows:

1. **Start up the Software Operation Panel.**

   Refer to “8.1 Scanner Settings” on page 166.

2. **Select the “Timeout for Manual Feeding” setting on the [Device Setting 2] tab.**



3. **Select the timeout period for manual feeding.**

   You can specify the timeout period by seconds. Scanning will be complete when the specified time period has elapsed after the last sheet of paper was loaded onto the Hopper.

   Select a timeout period from the following:
   5, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110 (seconds)

HINT

For details on how to scan the document manually, refer to “2.12 Feeding Documents Manually” on page 34

9 OPTIONS

This chapter describes options for fi-5900C.

9.1 Options 196

9.2 fi-590PRF (Pre-imprinter) 197

9.3 fi-590PRB (Post-imprinter) 198

9.4 Other Options 199

9.1 Options

The following lists options available for the scanner.

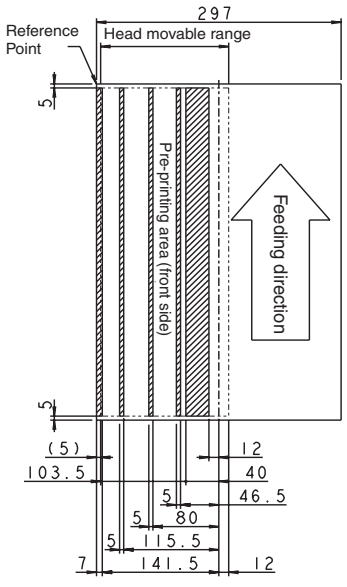
Name	Part No.	Description
fi-590PRF Pre-Imprinter	PA3450-D700	Prints an alphanumerical string on the document to be scanned. The printing is done on the front side of the document and before it is scanned. As a result, both the document and the generated image will bear the same string of your choice (name, date, serial number etc.) for archiving.
fi-590PRB Post-Imprinter	PA3450-D710	Prints an alphanumerical string on the document scanned. The printing is done on the back side of the document and after it is scanned. Only the document will bear the string of your choice (name, date, serial number etc.).

For the details, contact FUJITSU scanner dealer where you purchased the scanner or FUJITSU group company responsible for your country.

Both imprinters can be installed on the scanner at the same time.
However, only one of them can print at a time.
Select the appropriate imprinter depending on your needs,.

9.2 fi-590PRF (Pre-imprinter)

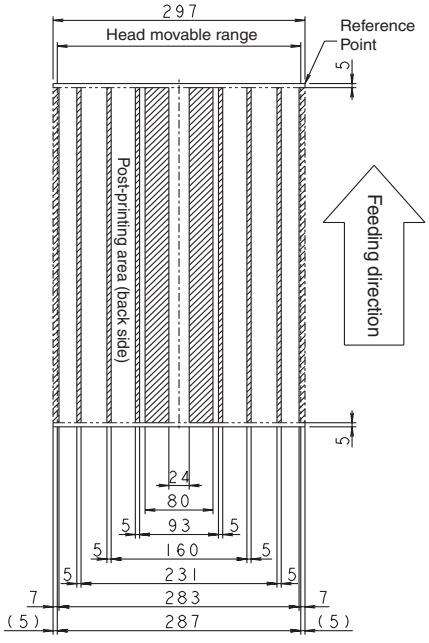
fi-590PRF is installed at the front side of the Transport path, inside of the scanner. It prints prior to scanning. fi-590PRF (Pre-imprinter) specifications are described below.

Item	Descriptions
Printing Method	Thermal Ink Jet
Printable characters	Alphabet letters: A to Z, a to z Numeric characters: 0,1 to 9 Symbols: ! ” # $ % & ¥ ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ¯
Maximum printable characters per line	40 characters (When using 8 digits counter: 43 characters)
Print Orientation	Normal: 0º, 180º (horizontal), 90º, 270º (vertical) Narrow: 0º, 180º (horizontal)
Character size	Normal: Height 2.91mm x width 3.03mm / 0.1146 x 0.1193 in (horizontal) Height 3.03mm x width 2.91mm / 0.1193 x 0.1146 in (vertical) Narrow: Height 2.91mm x width 1.71mm / 0.1146 x 0.0673 in (horizontal)
Character pitch	3.79mm / 0.1492in (Normal), 2.46mm /0.0968in (Narrow)
Font Style	Regular, Bold
Character Width	Normal, Narrow
Printing area	 Unit: mm * The document stains with ink when printing in the shaded areas (shown in the illustration). Therefore, correct printing operations in such areas are not guaranteed.
Printing Position Accuracy	Vertical: ± 4mm Horizontal: ± 4mm
Consumables	Print Cartridge

As for the operations and functions of fi-590PRF (Pre-imprinter), refer to the fi-590PRF Operator's Guide attached to fi-590PRF.

9.3 fi-590PRB (Post-imprinter)

fi-590PRB is installed at the rear side of the Transport path, inside of the scanner. It prints after the scanning. fi-590PRB (Post-imprinter) Specifications are described below.

Item	Descriptions
Printing Method	Thermal Ink Jet
Printable characters	Alphabet letters: A to Z, a to z Numeric characters: 0,1 to 9 Symbols: ! ” # $ % & ¥ ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ¯
Maximum printable characters per line	40 characters (When using 8 digits counter: 43 characters)
Print Orientation	Normal: 0º, 180º (horizontal), 90º, 270º (vertical) Narrow: 0º, 180º (horizontal)
Character size	Normal: Height 2.91mm x width 3.03mm / 0.1146 x 0.1193 in (horizontal) Height 3.03mm x width 2.91mm / 0.1193 x 0.1146 in (vertical) Narrow: Height 2.91mm x width 1.71mm / 0.1146 x 0.0673 in (horizontal)
Character pitch	3.79mm / 0.1492in (Normal), 2.46mm /0.0968in (Narrow)
Font Style	Regular, Bold
Character Width	Normal, Narrow
Printing area	 Unit: mm * The document stains with ink when printing in the shaded areas (shown in the illustration). Therefore, correct printing operations in such areas are not guaranteed.
Printing Position Accuracy	Vertical: ± 4mm Horizontal: ± 4mm
Consumables	Print Cartridge

As for the operations and functions of fi-590PRB (Post-imprinter), refer to the fi-590PRB Operator's Guide attached to fi-486PRRE.

9.4 Other Options

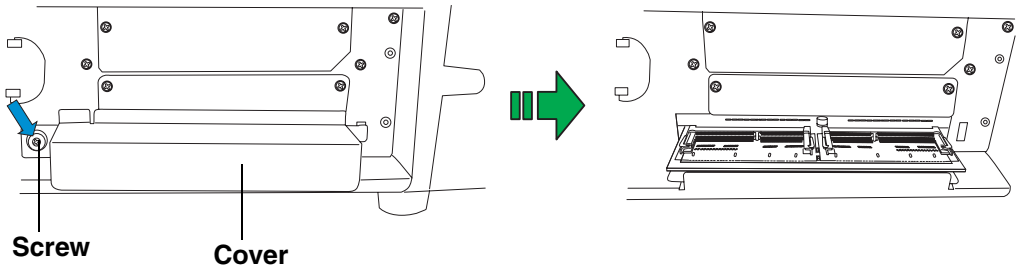
■ Extended Memory

Increasing memory is an effective way to improve the scanner's processing speed when scanning at high resolutions. (For example, this may prevent the scanner from pausing when scanning double-sided color A3 documents at resolutions higher than 400 dpi).

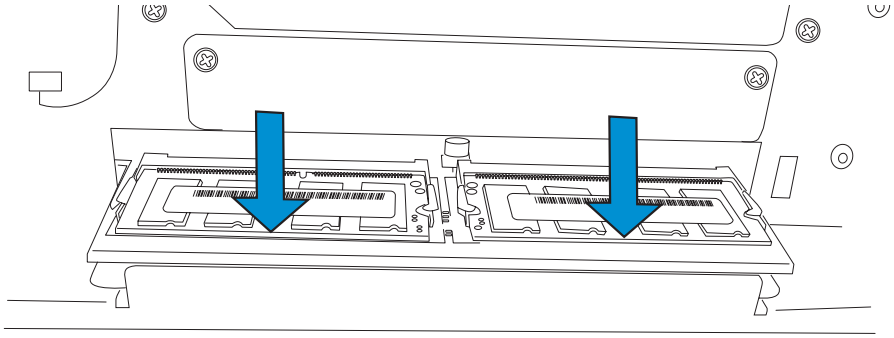
Before you install extended memory, please first touch metal objects to release static.

1. **Switch off the scanner's main power switch, unplug all connecting cables.**

2. **Unscrew the back cover of the scanner and take it off.**



3. **Insert the memory into the slot, and push down the module until it locks in position.**



4. **Put back the cover and tighten the screw.**

The memory listed below is recommended. Two modules of the same specification must be installed at the same time.
The memory modules are not provided with the scanner.

Memory type: 144-pin Unbuffered DODIMM

Manufacturer	Model	Size
Micron Technology	MT8LSDT3264HY-133D2	256MB

The scanner may not function properly if two modules of different types are installed at the same time.

You can confirm whether the memory modules are installed properly or not through the [Software Operation Panel]:
Click the [Device Setting] tab and check the value of scanner memory under “Standard Information”.

10 SCANNER SPECIFICATIONS

This chapter describes the Scanner Specifications.

10.1 Basic Product Specifications 202

10.2 Installation Specifications 204

10.3 Dimensions 205

10.1 Basic Product Specifications

1	Scanner Type		ADF (Automatic Document Feeder) and Manual feed		-
2	Image sensor		Color CCD x 2		Front/Back
3	Light source		Incandescent cold cathode fluorescent lamp x 2		Front/Back
4	Scanning area	Minimum	53 mm x 74 mm, 2.1 in. x 2.9 in.		-
		Maximum	304.8 x 431.8, 12 x 17 in.		-
5	Document thickness		31 g/m^2 to 209 g/m^2		(* 1)
6	Scanning speed (A4 Portrait) (* 2) Binary (Black and White) Grayscale Color		Simplex ppm	Duplex ipm	(* 3) Grayscale, Color
		200 dpi	100	200	
		300 dpi	100	200	
		400 dpi	60	120	
		600 dpi	30	60	
7	ADF capacity (* 4)		500 sheets		80 g/m^2 (Hopper set to lower position)
8	Optical resolution		600 dpi		-
9	Output resolution	Binary (Black and White)	50 ~ 600 dpi		scalable in steps of 1 dpi
		Grayscale	50 ~ 600 dpi		
		Color	50 ~ 600 dpi		
10	Grayscale level		8 bits color		10 bits internal
11	Output mode of halftone patterns		Dither/Error diffusion		-
12	Interface (* 5)		USB 2.0/1.1(*6)		B type
			Ultra Wide SCSI (*7)		Shielded, 68 pin half density (High Density DB68)
13	Other functions		JPEG compression		-
14	Option	Imprinter	fi-590PRF/fi-590 PRB		(*8)

(*1) For details, refer to "7.2 Document Quality" on page 153.

(*2) The scanning speed is the maximum speed of the scanner hardware. The actual speed may be slower due to the system overhead such as data transfer time.

(*3) With JPEG compression enabled

(*4) The maximum capacity varies depending on the document thickness. Refer to"7.3 Maximum Document Loading Capacity" on page 156 .

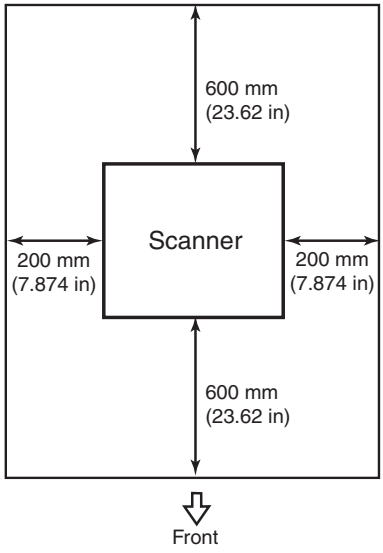
(*5) The SCSI and USB interface cannot be used together.

(*6) When using USB 2.0, you have to use a port compatible to USB 2.0. When connecting to USB 1.1, the scanning speed will decrease.

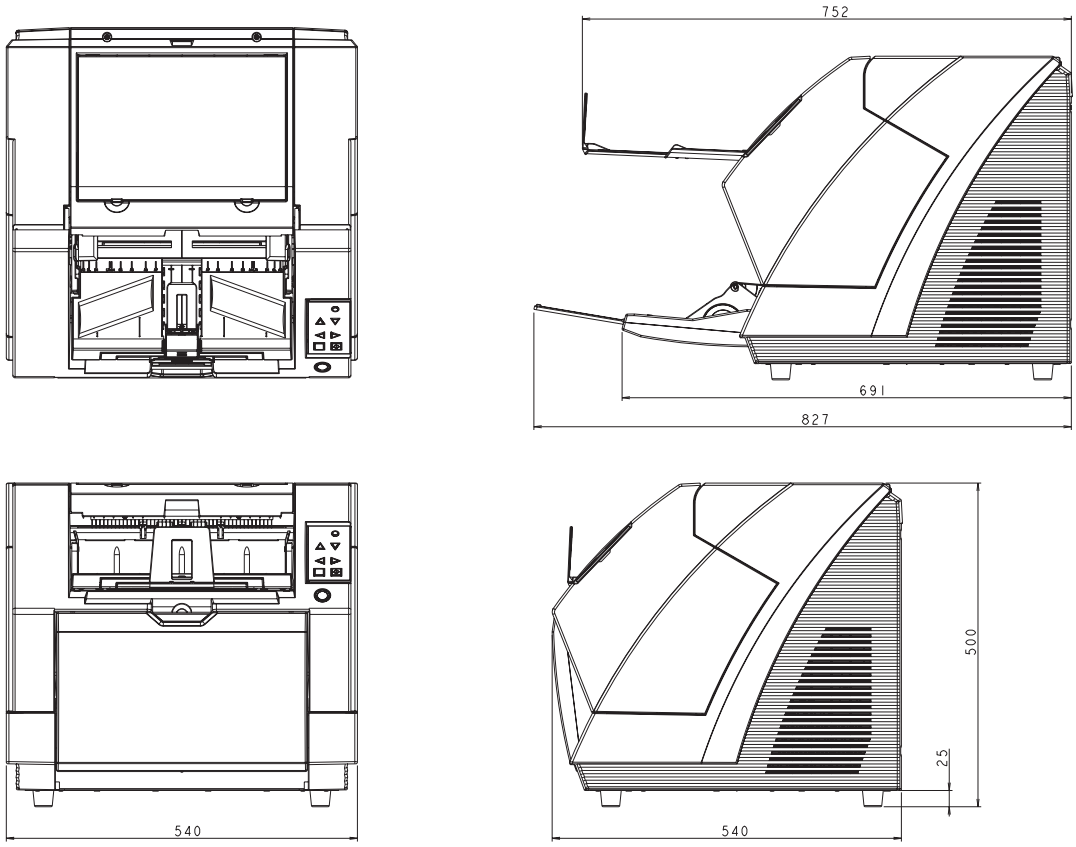
(*7) Avoid connecting other SCSI devices to the same bus. It can reduce the scanner throughput.

(*8) You can imprint alphabetic characters and number on the scanned document.
The fi-590PRF (pre-imprinter) will print prior to scanning on the front side of the document.
The fi-590PRB (post-imprinter) will print after the scanning on the back side of the document.
You can install both the fi-590PRF and fi-590PRB, but you cannot use them at the same time.

10.2 Installation Specifications

<table>
<tr><th colspan="2">Item</th><th colspan="3">Specification</th></tr>
<tr><td colspan="2" rowspan="2">Dimensions
(With hopper and stacker retracted)</td><td>Depth</td><td>Width</td><td>Height</td></tr>
<tr><td>540 mm,
21 in</td><td>540 mm,
21 in</td><td>500 mm,
20 in</td></tr>
<tr><td colspan="2">Space requirements</td><td colspan="3"> 
</td></tr>
<tr><td colspan="2">Weight (kg)</td><td colspan="3">50 kg (110.4lb)</td></tr>
<tr><td rowspan="3">Input power</td><td>Voltage</td><td colspan="3">AC100 - 240 V±10%</td></tr>
<tr><td>Phase</td><td colspan="3">Single-phase</td></tr>
<tr><td>Frequency</td><td colspan="3">50/60 Hz ±3Hz</td></tr>
<tr><td colspan="2">Power consumption</td><td colspan="3">250 W or less</td></tr>
<tr><td rowspan="3">Ambient condition</td><td>Device status</td><td>Operating</td><td colspan="2">Not operating</td></tr>
<tr><td>Temperature</td><td>15 to 35 degrees Celsius
59 to 95 degrees Fahrenheit</td><td colspan="2">-20 to +60 degrees Celsius
-4 to +140 degrees Fahrenheit</td></tr>
<tr><td>Humidity</td><td>20 - 80%</td><td colspan="2">8 - 95%</td></tr>
<tr><td colspan="2">Heat capacity</td><td colspan="3">172 kcal or less</td></tr>
<tr><td colspan="2">Total Package Weight (kg)</td><td colspan="3">70</td></tr>
</table>

10.3 Dimensions



unit: mm

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fi-5900C Image Scanner Operator's Guide

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